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PRELIMINARY OBSERVATIONS ON THE MICRO-ORGANISM OF TEXAS FEVER.*

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SOUTHERN Cattle Fever, or Texas Fever, as it is more popularly known, is an infectious disease of the malarial type. The infectious agent, bound to a particular locality, is only temporarily transferred by cattle to places free from permanent infection. During the past summer healthy cattle brought from North Carolina, late in June, infected a small enclosed patch of pasture at the Experiment Station of the Bureau of Animal Industry. Of the native cattle placed in this enclosure at the same time, the first died late in August. Up to the last week in October, ten had succumbed to the fever and two recovered. The territory, even after the Southern cattle had been removed, was still capable of infecting fresh animals placed upon it. There was also a continual increase or accumulation of the virus in the enclosure, for the animals placed on the ground late in the season died after an exposure of but one-half or one-third the period which was necessary to destroy those exposed since early summer. The infection did not spread beyond the enclosure.

The first indication that the disease had entered the system and was there unfolding its destructive activity, was a continuous high temperature, fluctuating very slightly and subsiding only when death or recovery ensued. The temperature rose from 101°-102° F.,

* Read at the Brooklyn Meeting of the American Public Health Association, October 23rd, 1889.

to 106°-107° F., and in the fatal cases remained high from four to fifteen days. After a variable number of days, the high temperature was accompanied by general weakness, lasting but a few days, when death ensued. Had it not been for the thermometer, the early stages of the disease would have remained unnoticed.

A few days before death, the urine became more or less deeply coloured with hæmoglobin, and in nine out of ten cases the bladder after death contained deeply tinged urine. In the tenth case, hæmoglobinuria was present three days before death. The destruction of red globules causing this condition could be easily demonstrated by examining blood taken from an incision through the skin. In several cases, on the day before death,* the number of red globules had fallen to about one million in a cubic millimetre of blood, the normal being about five million. In one case, now recovered, the corpuscles were reduced in number nearly one-half several days before the temperature fell to normal, and a week later the number had not yet risen to three million. This enormous loss of red globules gave the blood an exceedingly thin, watery appearance.

At the autopsy, besides the condition of the blood as noted, it was found to coagulate rapidly and form clots of unusual firmness. Large clots in the ventricles of one animal which had died during the night cut like liver tissue. The following description of the most obvious lesions will apply with more or less emphasis to all ten cases:

The spleen is enlarged to several times its normal size. When incised, the tense capsule retracts and discloses a dark-red more or less disorganised pulp, occasionally running out as a semi-liquid mass. This engorgement is due chiefly to the presence of an enormous number of red globules. The liver is the seat of considerable disturbance. Its colour is a yellowish-brown. The parenchyma is deeply bile-stained, and when examined under the microscope the finest bile canaliculi are found plugged in many cases with consistent, cylindrical masses of bile. We have, in fact, a complete pathological injection of the intra-lobular biliary system. The liver cells show more or less fatty degeneration. The bile in the gall-bladder is usually so thick that it scarcely flows. This is due to the presence of a large amount of solids in the form of minute yellow flakes. There is no obstruction to the flow of bile into the duodenum. The kidneys are in some cases suffused with the colour of hæmoglobin, and the connective tissue around them are distended with reddish serum. In some cases they are but slightly affected. The small quantity of albumin found in the urine may be accounted for by the hæmoglobin.

* Several animals were killed in a dying condition.

Lesions of the fourth stomach and intestines were either absent, or else did not differ much in degree from those observed in healthy cattle. In one case there were superficial ulcers in the fourth stomach. A more or less extensive ecchymosis of the duodenum is occasionally met with, more rarely in the cæcum. In none of the ten cases examined was there any appreciable jaundice.

I am fully aware that these facts, in much greater detail than my experience or my time will allow me to present them, have been before the public since 1868. My reason for bringing them up again is to connect the observations on the etiology to follow, with certain definite characters of a definite outbreak, so that there may be no question raised in the future as to the nature of the disease from which the following facts were derived.

In investigations of this nature, it is very desirable that all theories which may account for the disease process should be carefully tested. But the quantity of work to be done, if all are to be exploited at the same time, is so great that the work probably would end in a muddle. To the students of Texas Fever several theories clamour for attention. First, it would not be out of place to do as some observers have done, and locate the cause of the disease in the organ most affected, such as the liver, and refer the destruction of the blood elements to the reabsorption of bile from that organ. This theory, however, does not seem tenable, because the visible sign of the reabsorption of bile, jaundice, is not constant in Texas Fever, and did not appear at all in the cases upon which our investigations are based.

If we make the destruction of the red corpuscles the starting-point of our theory, we have two alternatives before us. The specific germ may multiply in the digestive tract, and there produce a ptomaine capable of dissolving red corpuscles when absorbed into the circulation. Those who are acquainted with the researches of Stadelmann, and more particularly Afanassiew, in Germany, will see the pertinence of this theory. These observers produced in dogs nearly all the lesions which I have mentioned as characteristic of Texas Fever, by feeding them on varying doses of toluylene-diamine. The absorption of this poison caused rapid destruction of the red corpuscles, followed by the injection of the bile canaliculi with thick bile, by jaundice and hæmoglobinuria. The other alternative would assume that the red corpuscles are destroyed by organisms in the blood itself. It will be seen, on a little reflection, that to test the truth or falsity of these hypotheses would require diverging lines of research, especially when we bear in mind that there may be disease germs which can only be detected with the microscope.

In order to understand the results obtained from the investigations conducted in the laboratory of the Bureau of Animal Industry, it will be best to give a brief summary of the latter. In the summer of 1886, two spleens taken from animals which had died of Texas Fever in Virginia came to the laboratory. Cultures from one gave a variety of bacteria. From the other all media remained sterile. At the same time the following observations were recorded.

In or on many red corpuscles there are small round bodies, perhaps 1 μ in diameter, centrally or somewhat excentrically situated, which stain poorly in an aqueous solution of methyl-violet, very well in aniline-water methyl-violet. They then resemble micrococci in size and form. Unstained, they can be seen as mere transparent spaces in the corpuscles.

No opportunities were presented for the further study of the disease within reach of the laboratory until the summer of 1888, when an outbreak in Maryland, about fifty miles from Washington, furnished the material. Five cases were found in a condition fit for study, and various organs were taken to the laboratory in refrigerator cans designed especially for such a purpose.

From these numerous cultures were made on different substrata, while the organisms of the intestinal tract likewise received due attention. In general, cultures from the spleen, kidneys, and urine remained sterile. From the digestive tract were obtained, almost pure, roll and plate cultures of a microbe probably identical with Escherich's *bacterium coli commune*. This organism was occasionally present in the liver and bile, and very rarely penetrated into other organs in very small numbers.

During the outbreak studied this summer, my time and attention were diverted into another channel. Cultures were made, however, from at least five cases upon such substrata as blood serum, agar, glycerin agar, and bouillon peptone, with the same negative result. While cultivation demonstrated the absence of bacteria from the blood and internal organs, the microscopic examination was equally fruitless.

The negative outcome of bacteriological work in 1888, combined with a careful study of the pathological changes in the organs which came to the laboratory at that time, led to the inference that the disease must be due to a blood parasite which could only be detected by the microscope. It thus became essential to have the disease within reach of a laboratory, so that the blood could be carefully studied during the course of the disease, and the material from the internal organs obtained absolutely fresh. These conditions were fulfilled in an admirable manner, as you have seen and the outcome has been the discovery of

what we believe to be an organism within the red corpuscles of the blood. The intra-globular bodies observed in 1886 were found in all the ten fatal cases of Texas Fever. It might be asked, Why was the organism not found in 1888? I would reply that, owing to the condition of the material, I could place no reliance upon the studies of the blood elements, which even under the best conditions are very difficult. Hence no attention was paid to this subject, the time being devoted to bacteriological studies. In these days it is necessary first to demonstrate the absence of bacteria before other results are credited. I may say, however, that preparations from one of last year's cases, re-examined a few days ago, showed the intra-globular bodies as distinctly as could be desired, but in numbers too small to be detected by any but the forewarned. The observations thus far made upon the intra-globular bodies may be very briefly summarised.

In fresh spleen pulp they are visible as round or oval, nearly colourless spots from $\frac{1}{2}$ to 2 μ in diameter on the disk of the red corpuscles, and always somewhat excentrically placed. Careful focussing leaves no doubt that they are within the body of the corpuscle. There may be but one, quite commonly two, and very rarely three, or four, in the same corpuscle. In organs kept in the cold for nearly two weeks they were still visible, but faintly, owing to the diffusion of the hæmoglobin around and perhaps into them.

When cover-glass preparations are dried, heated, and stained with the ordinary aniline dyes, these intra-globular bodies stain as readily as nuclei and bacteria, and hold the stain with a similar tenacity.

The smallest forms then appear like deeply-stained cocci, about $\frac{1}{2}$ to 1 μ in diameter, situated within the unstained circle of the corpuscle. Occasionally the bodies are nearer 2 μ in diameter, and then the staining may be less dense. Besides the spherical forms, ovoid forms are not uncommon, These usually occur in pairs within the same red corpuscle. A still rarer, pear-shaped form is encountered in stained preparations of the blood. It is rounded at one pole, while the other is pointed and sometimes drawn out as a short filament. These forms quite invariably occurred in pairs, a corpuscle being occupied by a single pair. I am very much inclined to consider the pair as the result of a division of the single body within the globule. In one instance I saw the tapering ends of a pair apparently continuous. Each body was about 3 μ long; its greatest width, 1·5 μ. These are the largest I have encountered. This same pear-shaped form I have only seen in cover-glass preparations made from blood during life.

That these parasites have the power of changing their form I cannot affirm from direct observation. The following illustration seems to indicate that they may. In one of the animals attacked the disease ran a brief, acute course. It was killed when the rapidly falling temperature and the inability of the animal to rise indicated death before the next morning. The spleen and liver were flooded with the intra-globular bodies. Perhaps every fifth corpuscle contained a pair. Cover-glass preparations, dried at the autopsy, showed the ovoid bodies very well. The kidney, for want of time, was placed in the cold. Twelve days later it was still in good preservation, and preparations made at that time showed a large number of intra-globular bodies in pairs, but round. It is highly probable that they changed their form in the cold.

One other abnormal form found in the blood deserves mention. When dried cover-glass preparations are stained in Loeffler's alkaline methylene-blue, a few red corpuscles appear as if their surfaces had been dusted over with minute specks of colouring matter. Whether they are due to the anæmia, or whether they belong to the cycle of the parasite, remains to be determined experimentally.

As to the relative number of intra-globular bodies in the different organs of the same animal, the ten cases which have come under observation afford some noteworthy facts.

As a rule, there are very few in the circulating blood, whether taken from incisions through the skin before or during the death-agony, or from the heart after death. There are exceptions to this rule, however. In one case they were readily detected in the blood from a skin incision one day before the animal was killed. Blood from the right ventricle showed an enormous number of these bodies, in pairs, within the red globules.

As a rule, then, the circulating blood contains comparatively few parasites. They are filtered out by the spleen and the liver. They may be numerous in one or both of these organs, and practically absent in blood from the right ventricle. They are somewhat more numerous in the spleen than in the liver. This estimate may, however, be erroneous, owing to the larger number of corpuscles in the spleen pulp. I paid but little attention to the blood in the kidney. In two cases in which a very large number of parasites were found in spleen and liver, they were likewise very abundant in the kidneys. The red marrow of the ribs, examined in four cases, contained none.

There are also a few facts at hand concerning the relative number of parasites in different animals at the time of death. In perhaps one-half of the cases they were so few in number in the

spleen that they might have easily escaped the attention of an observer searching for bacteria. In four out of ten cases the organisms were very numerous in spleen and liver, and could not well be overlooked. I found myself able to see them in a thin layer of fresh spleen pulp, with a dry apochromatic objective giving a magnification of not more than 250 diameters. In one case they were so few in number, even in spleen pulp, that a number of fields had to be scanned before any were detected. In this case the spleen was completely disintegrated. The urine, containing much hæmoglobin several days before death, was found of nearly normal colour at the autopsy. The animal had evidently overpowered the parasites, but died from the havoc caused by them.

Concerning the transmission of the disease from cattle to other animals, we have only the following experiment to report: Spleen pulp from a steer just killed, and containing very many intra-globular bodies, was stirred up in sterile salt solution, and of this red liquid $1\frac{1}{2}$ cubic centimetres were injected into the ear-vein of each of three rabbits. They remained permanently well.

The question now arises, What is this organism? We have seen it in but two recognisable forms, the sphere of slightly varying diameter, and the oval, pear-like form. I have already said that I believe these to be one and the same form, the latter a stage of division. This may or may not be true. The difficulties surrounding the direct observation of these minute bodies are very great, and we may have to rely upon indirect methods for more information. It might be argued that they belong to embryonic or degenerated red corpuscles. That they do not belong to embryonic forms I have been able to convince myself by examining the red marrow of the ribs, where the production of red corpuscles to take the place of the destroyed ones is very active. That they are not elements of degenerated corpuscles is too evident from what has been stated to require further discussion.

As to the true nature of the organism, only conjectures are possible at this stage of the inquiry. It may be a phase in the life-history of some of the lowest mycetozoa, such as the monadineæ, or it may belong to the group of sporozoa, some of which are pronounced cell parasites. As to the external characters of the disease, we have still to learn how the southern cattle carry the disease-germs while they themselves are immune, how the germs multiply on the pasture, and how they enter the susceptible organism of northern cattle; and whether or not they are ever eliminated from the diseased body to become a fresh centre of infection. These problems are intimately associated with the life-history of the parasite, and will finally be solved when its life is

thoroughly known. They are the most important from an economic stand-point, and their solution will, without doubt, throw a strong light on human malarial diseases.

I think that we may safely formulate a simple definition of this disease with the aid of the foregoing observations. It is essentially a blood disease. There is a continuous or paroxysmal destruction of red blood-corpuscles, due to an intra-globular parasite; and the disease results mainly from the incapacity of the internal organs, primarily the liver, secondarily the spleen and kidneys, to transform and remove the waste products resulting from such destruction. In milder cases the protracted anæmia, which results from the loss of corpuscles, may become the chief cause of exhaustion and death, even when the organs remain pervious and capable of carrying on their respective functions.

I have purposely omitted, in this brief sketch, to refer to the former investigations of Texas Fever. I need simply to say that, as far as my own have been carried, they contradict the results of those who claim to have found germs which can be readily cultivated. Their claims are just, so far as the finding of germs is concerned, but I do not doubt that they all have a *post-mortem* history, and that the investigators have been hampered by difficulties which it was impossible to overcome. There seems to be nothing which literally breeds bacteria so rapidly as a dead body in midsummer.

In conclusion, I wish simply to mention a few facts already on record, bearing directly upon what has been claimed in this paper. In glancing over the very excellent report of Dr. Stiles to the New York State Board of Health, in 1867, I find the following statement:—

"The red blood-corpuscles, when examined immediately after removal from the body, were shrivelled and crenated without artificial provocation. In one case many of the disks appeared to have lost a portion of their substance, as if a circular piece had been punched out, the addition of water failing to restore the disk to completeness."

I am convinced that Dr. Stiles had before him the intra-globular bodies, which must have been very abundant to call forth this statement. His description applies exactly to the appearance which was presented by these bodies in a few cases, more particularly when the bodies were relatively large. At that stage of our knowledge it was entirely excusable for Dr. Stiles to pass these bodies by without further attention.

In Virchow's *Archiv.* for January, 1889, V. Babes describes an enzoötic disease among Roumanian cattle along the banks of the Danube, which he calls Epizoötic (*seuchenhafte*) Hæmoglobinuria.

The disease has many features in common with Texas Fever, and many peculiar to itself. Toward the end of his investigations, made in the summer of 1888, Babes settled upon an intra-globular parasite as the probable cause of the disease. This he also found in masses outside of the blood-corpuscles in the œdematous hæmorrhagic infiltrations about the kidneys, stomach, and intestines. He describes it as a diplococcus, is able to cultivate it, and produces in rabbits by subcutaneous injection a disease fatal in from 1½ to two weeks. Without going into detail, I am inclined to consider this parasite, as described by him, quite different from the one found in Texas Fever. The Texas Fever organism has thus far failed to multiply in culture media. Its appearance did at no time suggest the characters of bacteria. It has not been found outside of red blood-corpuscles in any appreciable numbers. Inasmuch as both his and our investigations must be regarded as just begun, the future will have to decide how near of kin these two diseases are.

THE PRINCIPLES OF SOUNDNESS AND UNSOUNDNESS IN HORSES.

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VETERINARIANS are not all united upon the best attitude to assume towards the study of this subject. One gentleman writes to a sporting newspaper in India, and styles his subject "The best method of examining horses for soundness." We do not approve of such a designation: it is contrary to the teachings of science; but the term is elastic enough to admit of a Hindu *Fakir* or Mahomedan *Wahábee* sailing under it. The editor gives his own opinion in the same paper, and adds that "to examine a horse in the stall is the most important method." In noticing the horse under examination outside the stable, he enumerates what his correspondent has apparently left out in examinations for soundness. Our "law"-makers here might well suggest a man who should undertake the compilation of a lexicon without a competent knowledge of syntax, pathology governing, but scorning to be governed by any factitious laws or traditions. It is a reproach, as well as an anomaly, to virtually submit, on open ground, to be disciplined, and taught our duty by a code of pedantic maxims and crude discordant "laws." And yet, who does not see that this is often shamelessly encouraged? What short-sighted policy with the view of saving a few men, or any number, the ennobling and

remunerating pains of thinking for themselves, to heedlessly foster the wide diffusion of a bald, superficial knowledge, by recognising the circulation of despotic canons framed by individual men.

We have merely to insist, once more, on the fact so prominent with our earliest forefathers, that to define or comprehend "disease," we must thoroughly understand the problem of health. Physiology first, then pathology: not unlike the shadow to the body. We should establish certain *broad principles* by which to judge of and detect disease. That our success must ever depend on the kind or nature of these principles, there can be no doubt. Anything short of this recognition (of general principles) must fail to meet the requirements of so comprehensive a subject as soundness and unsoundness in horses.

Having already stated that different practitioners regard the question of soundness and unsoundness from various points of view, I shall now proceed to illustrate very briefly my argument, by pointing out the various specialities on which they place reliance. Thus, a man who has more particularly devoted himself to the study of physiology, would be more inclined to examine into the animal's state of health first. He will examine into the state of circulation by calculating its effects upon the mucuous membranes, and by observation of its speed, character, etc., by obtaining the character of the pulse, and by auscultating the sounds of the heart.* He will remember to look for the condition known as "jugular pulse"; will, moreover, auscultate the respiratory murmurs, and so ascertain any abnormalities of structure, by characterising the nature of change of function, determining also the rate of blood-flow through the capillaries, by noticing the lividity or turgescence of the mucous membrane lining the nasal cavities—the latter a result of inadequate oxidation of the blood, indicating torpidity of circulation at the lungs; while the former, a sign of due oxidation, pointing to a more free circulation in the pulmonary capillaries. He will take cognisance of the proper or improper and sluggish operation of the principal glands and viscera of the system—takes note of the actual functional character of the intestinal secretory glands, by observing the character of the fæces; also that of the sudoriparous (secretory) and sebaceous (excretory) glands, by noticing any sensible perspiration following exercise in the case of the former, and observing a glossy, "satin" aspect of the coat in that of the latter. He will determine the state of the kidneys by noting the quantity and quality of the urine passed in a certain lapse of time, and that

* Get a man to hold the head and pull the near fore-limb of the animal forward by his right hand applied to the back of the knee: then examine.

of the salivary (secretory) glands, by noticing if mastication is assisted by a due supply of saliva. He tests the state of the nervous apparatus by determining whether the peripheries respond to stimuli, more particularly examining the sense of vision, with a view to discover if anything interferes with the arrangements, construction, etc., of its complex mechanism.

The abstract mechanical observer, on the other hand, estimates all this as simply non-essential, as connected with the soundness or unsoundness of a horse, but takes cognisance much more particularly of symptoms more palpable and proximate. He dexterously, and not rarely with a more or less show of theatrical make-believe, moves round his animal with grave composure, now nodding to the feet, now to the hocks, to the angle of the hips, and round again to the front of his animal. He then proceeds, with an educated touch, to the rapid manipulation of the limbs or parts thereof most liable to disease, and with a fillip of the fingers over its eyes, to test optic response, and a sudden dig in the sides, to bring out the "roarer," terminates the farcical "examination." He does not forget to record the age, which is, of course, for certain reasons in our animals an extension of the monetary value, and an index of the number of years it is likely to continue actively serviceable.

The general pathologist will, however, while first running over the points noted by the physiologist to judge of the animal's health, next take up the manifestations of disease, point by point, comparing and combining the nature, character, and possible results of any deviation from the normal state he may detect, not limiting himself to the consideration of things as they stand, but enquiring into the possible future of those symptoms, whether likely to be attended with ultimate recovery, or eventuate, perhaps, in added disease. He will not be misled by the amount of structural change, or biassed by the threatening aspect of existing symptoms, but take into consideration the qualifying circumstances of each individual case, such as the seat of the disease-change and its relationship to important organs and structures, etc., lest, by encroaching on them finally, they may impede some vital function; the duration of the disorder; its character as an innocent growth or malignant disease; the age, previous history, etc., of the animal.

To point the moral to my argument, then, we must be extremely guarded in the selection of the reasons we assign for soundness or unsoundness in the horse, and of the basis upon which we found them. Let us take, for instance, a practical illustration of this in the case of lameness. We have all, no doubt, observed that many an animal that combines lameness with disease, is often better

than one that is diseased only; and this for the very simplest reasons, that is because of the difference in the nature of the causes at work in each instance. And hence it will be seen that we have no more justification in speaking of a horse with the additional infirmity of lameness as necessarily "unsound," than we should have in describing as "sound," one that is in a diseased condition only. The inference is obvious. Let us take a further instance in the case of what is known as "chronic laminitis," and we see the truth of exactly the reverse in the conditions of the proposition laid down above. That is in cases where the symptoms are much more marked than is warranted by the visible changes that are believed to be concerned in the production. And this, I think, shows from both points of view the utter inefficacy of "rules" in furnishing any adequate or reliable clue to diagnosis.

Again, some practitioners are of the opinion that a "pumiced" condition of the sole is the crumenal diagnostic test, and indicative of chronic laminitis. But it is well known that chronic laminitis may exist where the conditions of the sole, as above described, are almost wholly absent. Let us take a few examples. What is it that constitutes the pumiced condition of the sole? This condition is the result of displacement of the "coffin bone," and this displacement depends upon exudation, the result of inflammation of the laminæ of the foot, having taken place in front of and below that bone. Now, it is within the scope of any pathologist to show that the degree of the exudation is not always such as to occasion this bulging of the horn, so as to constitute the peculiar condition of "pumiced sole." And in this lies the explanation why Laminitis and the exudation concerned in the production of the pumiced sole, when present in excess should, under certain circumstances, co-exist, while the condition known as "pumiced sole" may be absent. An upright contracted foot, for example, is regarded by some as certainly diagnostic of the condition known as "navicular disease." Many of us have, doubtless, seen numerous instances in which this peculiarity is one merely of breed, and in others where it is an individual peculiarity. Were such animals, then, to be presented to us for purposes of examination, should we be justified in pronouncing them to be the subjects of navicular disease? To take yet another instance: it is the creed of the "cute horsey man" that an animal which shows signs of "broken knees" has certainly deteriorated in point of value to the extent of many pounds sterling. The great mistake is not inquiring into the causes of these signs, for it is ridiculous that often an *accident* should interfere with the value of a horse. The animal may be perfectly sound and strong, and by no means weak-kneed, and yet such a hold has this superstition as to

"broken knees" taken on some minds, that the animal is immediately rushed out of the market, unless his owner also become infected by the panic, and consent to part with the animal at half his price. We do not mean to contend that all horses do not, or rather ought not, under such circumstances to deteriorate in value. It is merely a matter for common sense, and an inquiry into the causes of the misfortune. The animal may of course be weak-kneed, and this may very often be the surest indication of the fact. But this must not be taken as the *ne plus ultra* of criterions in all cases. Again, we know that exostoseal enlargements are looked upon as indicative of unsoundness, but in many instances this is not the case, and by the employment of a little reflection we may enumerate several instances. We know that in young animals exostoses are commonly developed and disappear with the increase of age of such animals. Would it be right to speak of these animals as unsound when, after a time, these enlargements, some of them of a large size, cause no harm to their future usefulness? The fact is not strange to most practitioners, and we adduce it merely as an instance of the number and variety of the pitfalls that await the unwary, and, further, because of its applicability to our argument. Moreover, in certain horses exostoses of the form known better among horsey men as "Spavin" may exist, and yet there may be no indication whatever of lameness. This animal is by practical men pronounced to be "practically sound." Now, let us analyse this and see what it amounts to. So long as that horse is ridden gently and by a light weight there will be no reason to suspect the soundness of the opinion. But let it be taken into the hunting-field or be ridden by a heavy weight, and what dire results ensue! The spavin is augmented and excited to action, and the animal shortly goes "dead lame." To take one more instance; "bog-spavin" has been looked upon as constituting unsoundness. We are aware, however, of many horses with "sickle-shaped" hocks possessing this condition as a peculiarity of normal conformation, and in no way connected with disease. And so on, we could multiply instances *ad infinitum*.

The reader will have gathered from the foregoing that it is, indeed, needless to depend upon rules in the face of broad principles. This, some will say, is a matter of opinion, but the only opinion worth a straw in such a case is the opinion of the profession, which owes its entire intelligence to the principles of science.

Having thus indicated the main view in end I had in writing this article, and finding that time is short and space limited, I must draw to a conclusion, with a few brief remarks upon the following points—

Age.—The bearing that age has on the soundness or unsoundness of horses is also significant, and we must not fail to recognise the importance of this, or to take account of the weight it possesses in all such decisions. For instance, to take the case of a two-year-old colt or filly at "grass," that shows decided signs of exostoses in the shape of large, phantom "ringbones." By the time the animal will have been taken from grass and put to work these will all have disappeared, as a rule, leaving no traces of its former presence. Now in such a case the animal would very rightly be described as "sound," and the manifestation of an apparent disease would, in this instance, decidedly not constitute any bar to the expression of such an opinion. Further, in certain breeds of horses we very rarely encounter an animal of this age that does not exhibit a marked tendency to this condition, and yet, as above stated, when put to work it has no practical bearing on the subject of their soundness, and this for the simple reason that the removal of the "disease" has been spontaneously effected. Again, "Spavin" in a five-year-old horse would very much more deteriorate its value than it would that of an animal of eight or nine years. For the reason that the disease, when existent in the former, though the horse show no symptoms of lameness, is liable within the next two or three years, very liable I may say, to reassert its activity, and this even under the most favourable conditions; with the latter, however, this is so far from being the case that, unless ridden by a heavier weight than it has been accustomed to, or is fitted to bear, it will remain in a sound and reliable condition.

Anatomical Conformation.—Peculiarities of anatomical conformation offer no criterion of the soundness, or the contrary, of a horse, since many anatomically deficient in a particular part often physiologically supersede the most consummate development in another animal. It is only when the anatomical deficiency bears a *pari passu* relation to a physiological defect that the former may be termed unsoundness. Anatomical deficiency, the result of congenital causes, when not in itself physiologically deficient, is, as opposed to anatomical deficiency, the result of disease *per se*, not unsoundness. Physiological deficiency denotes disease, and hence a state of unsoundness. But we may be asked what constitutes a physiological defect, and the term be considered vague or indefinite. The anticipation vanishes as soon as we realise what physiological efficiency consists in. Not a few cases of anatomical deficiency, physiologically unfit for one kind of action, will be found physiologically suited to a different kind of work.

Breed.—There can be no doubt about different breeds affecting the question of soundness and unsoundness. For instance,

"broken wind" is seldom seen in thoroughbred and carriage horses, but is comparatively common in cart horses. "Roaring" is rare in Australians, and still more so in country-bred horses in India. Navicular disease is considered rare in Arab horses, although they have naturally contracted feet. It is surprising the amount of attention that is paid to the condition known as "bog-spavin" in England, whereas it seldom causes lameness in horses in India. "Thorough-pin," which is considered hereditary, is likewise not attended by any signs of lameness in horses in India, and therefore does not constitute an unsoundness.

Heredity.—Similarly heredity will influence the question of soundness and unsoundness, as to whether the condition is acquired or inherited, chronic or of recent date, etc. Hence seat, age, breed, constitution, etc., will all influence the question of soundness and unsoundness in different cases.

The recognition, then, of broad *principles* everywhere is the only true basis of pathology, without keeping which steadily in view our practice must be, in no slight degree, a proceeding of hesitation and mystery, when there should be neither.

Our *confrère*, Mr. Fred. Smith, A.V.D., has well remarked: "The practised eye and the habit of observation, it is true, make our conclusions in time almost intuitive, and a certain amount of pride is engendered at the facility with which correct opinions are usually arrived at; but undue confidence is produced, a look at the animal over the stable door is deemed sufficient, an off-hand, all round glance at a horse as to soundness is affected, sympathising onlookers applaud the readiness resembling inspiration, and are perhaps fascinated to such an extent as to prefer the gifted, brilliant, careless, haphazard individual, to the honest, painstaking, observant, systematic man of accuracy, who resorts to every known test in diagnosis, and carefully draws conclusions—giving a reason for the belief that is in him. Medicine, human or veterinary, it is admitted cannot be deemed an exact science; but, in consequence of the difficulty in attaining exactness, so much the more careful ought we to be to approach exactitude as nearly as possible."

SEPTICÆMIA AND PYÆMIA.

BY C. B. JONES, ONT. VET. COLLEGE, TORONTO, CANADA.

In considering the pathogenesis of these two morbid conditions of the blood, it is my desire to place them in such manner as will not lead to confusion in drawing a distinct line of demarcation, and that will materially aid in determining a proper conception of the primordial relations of the two diseases. To accomplish this will

necessitate, firstly, a glance at the derivations and meaning of each technical term; and, secondly, a short sketch of the nature of the organisms concerned in the production of the respective diseases, their separate mode of propagation, and the subsequent lesions produced by their entrance into the blood.

Septæmia, or *Septicæmia*, derived from two Greek words, signifying "putrid blood," is essentially the same as *Ichoræmia*—a term used to denote a poisoning of the blood from absorption of sanious matter. Thus it will be seen, according to its derivation, and from the use of the term at the present day, this disease may be alluded to under two heads, viz., "*Septic poisoning*" and "*Septic* or *putrid infection*," the latter being now held to be the true form of Septicæmia, due to the introduction into the system, from a putrid wound, of a pathogenic organism, the non-pathogenic form, or bacterium termo, being alone associated with septic poisoning. These bacteria termo, having gained access to a wound, produce what is generally considered a putrefactive decomposition, *i.e.*, the changing of proteids into soluble peptones; the subsequent splitting up of these into component parts, and the further decomposition of these and other crystallizable nitrogenous bodies into low compounds. These, by oxidation, ultimately yield ammonia, etc., with the development of certain gases and other products. In this process there are produced certain alkaloids, among which are cadaverine and putrescene, together with the septic poison, sepsin—principles that, by experiment, have been shown to produce toxic effects, when introduced, in sufficient quantities, into the blood.

To the condition induced by the absorption and entrance into the blood of these chemical products of decomposition, without the presence therein of living organisms, has been applied the term "*Septic poisoning*," or intoxication; but insomuch as it may co-exist with those forms produced by pathogenic bacteria, we shall not further consider it separately.

"*Septic infection*" differs from the condition above referred to, in that it is due to a specific organism capable of living and rapidly multiplying within living tissue. The organism concerned in the production of this infection is a bacillus, varying in size with the animal affected. As a rule, they are very minute in the lower animals, the larger size being found in human Septicæmia. These bacilli enter the lumen of the vessels, and multiply by the production of spores in their interior.

The experiments of Koch, Davaine, and others, are interesting in this connection, and may be alluded to at this point. Koch found, when injecting a small amount of putrid material into the backs of mice, that a great number of them recovered without

showing signs of illness; but a certain number sickened and died in about fifty hours. After injecting a minimum quantity of blood from the dead mouse into a healthy one, he noticed that it, too, died in about the same time. This mode of procedure might be extended to any number of generations, yet the same results follow each inoculation. This disease he has termed "*Septicæmia of mice.*" In it there are not produced the metastatic abscesses of Pyæmia, and when the blood is examined it is found to contain bacilli in large numbers. These organisms may be traced direct from their point of entrance, until they reach the blood-vessels, entering which the fungi pass along the blood stream, first attacking and subsequently penetrating the white blood corpuscles, propagate in their interior, and ultimately disorganise them. The red corpuscles drawn during life run into clumps, rather than in rouleaux, as in health, and some observers have seen widespread capillary stasis.

There are different forms of this disease, varying with the animal infected, but in each case the bacilli are constant, the severity of the affection varying with the number of organisms found in the blood, and in the rapidity with which they multiply. In this respect, also, it differs from the intoxication, as by the injection of a small quantity of the alkaloids, no symptoms will be presented, insomuch as the fatality depends upon the dose of the poison, it requiring the absorption of at least one to three ounces of the chemical products of decomposition to kill an adult, whereas the injection of a minimum quantity of serum containing the bacilli of infection is adequate to the production of a most virulent form of the disease, it only requiring a longer time in which the organisms may propagate.

The symptoms of Septicæmia proper are not such, clinically, as would readily distinguish it from the condition of poisoning, the most prominent being rigors, followed by fever; may be delirium, rapidly succeeded by stupor, or even deep coma, more especially in the infective form; tongue dry; eyes dull, and increased conjunctival secretions; vomition; occasional diarrhœa, with rare symptoms of gastro-enteritis; skin shows a jaundiced tint; albuminuria is usually present; pulse is rapid and feeble. In the infective form the patient does not succumb so quickly as in the non-infective, the characteristic ending of which is a speedy collapse.

Post-mortem lesions of the two forms, to the naked eye, are practically the same. Rigor mortis feeble, and decomposition early; blood may be dark and fluid; owing to rapid disintegration of red blood corpuscles, lining membranes are deeply stained; petechiæ beneath serous membranes; hypostatic congestion;

spleen swollen and pulpy; liver is also often affected. Microscopic examination of blood reveals the presence, in the infective form, of the bacilli in large numbers, while absent entirely in septic poisoning.

Pyæmia is derived from two Greek words, signifying, separately, "pus" and "blood," thus implying a state of the blood in which pus globules are floating among the proper blood discs.

Although this disease is complicated usually with more or less septic poisoning, yet the dissemination of the cause gives rise not only to a general disease, but also to secondary centres of inflammation and suppuration—the characteristic metastatic abscesses which, together with the very irregular temperature in various parts, are the distinctive clinical differences between Septicæmia and Pyæmia.

The primitial cause of this disease is a thallophyte, presenting the characteristics of a micrococcus; but always developing in chains of cocci, may therefore, in this case, be very properly termed the Streptococcus pyogenes. These fungi, being taken into the veins, are carried swiftly along the blood stream, until, reach- a suitable habitat, small numbers cling to the inner coat of the vessel, and in their usual manner of propagation—by fission—some dividing and setting free a single coccus, others dividing transversely and at right angles, sarcina-form like—they form a colony, each member of which is partially cemented to other cocci by their natural secretion, the viscid zooglea, which secretion tends to retain them, until, by their rapid multiplication, the thrombus thus formed projects far into the lumen of the vessel. It is at this stage that an important change takes place—a change that, at one time, was looked upon as being the primary cause of the disease, but now clearly shown to be only secondary; *i.e.*, a *suppurative phlebitis*; and it may be interesting to note the changes that occur, remembering that the same process may be carried on in various places at the same time: Necrosis, more especially of the intima, occurs, from its occlusion from the blood by the base of the thrombus; gradually the coat becomes thickened, from infiltration of leucocytes, induced thither by the irritant properties of the organisms; following this thickening is a retrogressive change in the thrombus, it undergoing a process of infective puriform softening, rapidly succeeding which are the more important changes, of an acute inflammatory nature, in the vessel walls, due to the irritation of the decomposed debris. The inner surface is of an opaque, dead colour; the media and extima are injected, presenting, also, numerous hemorrhagic spots. The innermost cells are shed into the vessel; collections of pus are noticed between the coats, and through them the surrounding tissue becomes involved.

The same process may be seen in arteries, yet, as a rule, the current is too great to afford the cocci a suitable nidus.

Let us now, for illustration of the numerous lesions possible to exist in a single case of Pyæmia, imagine this thrombus to have formed in the femoral vein or one of its collaterals. After being broken down, the infectious materials are carried into larger veins —where it is not at all probable that a second thrombus can form —until the cavæ are reached; thence they are carried to the right heart, and in this viscus frequently find a suitable nidus, rapidly multiplying and producing ulcerative endocarditis, as well as destroying, to a great extent, the function of the valves. The products of the resulting suppuration are carried by the pulmonary artery to the lungs, where, besides numerous small abscesses, an occasional hemorrhagic infarction is also noticed, but which soon breaks down, and collections of pus and the slough of lung tissue supervene. These infarcts are seen more abundantly on the surface of an organ, where the vessels anastomose less frequently, but where the collateral supply is not entirely shut off. When an embolus lodges in the renal artery, unless canalisation is immediate, a red infarct results, *per diapedesin*, from its collaterals. These infarcts are characterised by the usual hyperæmic ring, as in aseptic cases, but are not so persistent. Passing through the lungs, a few organisms again reach the heart and are sent to all parts—to the brain, producing symptoms of abscess; to the liver, by the hepatic artery or portal system, where multiple abscesses occur, the slow circulation in this organ being particularly adapted to their formation; also, to the spleen and pancreas, as well as to the joints, where the virus is spread over the surface of the synovial fluid, the result of which is an acute arthritis, rapidly followed by suppuration. In this there may be but little change in the synovial membrane, the exudation occurring chiefly from the blood-vessels, to which the whole condition may be confined.

Thus it will be seen that the secondary abscesses are of two kinds—those following infarction, and those in which no such primary condition has been noticed. However, the suppuration, in either case, is evidence conclusive that a violent irritant has been carried to the tissues, and is exercising its irritant properties upon them. The extent of the suppurative process depends, probably, upon the excessive peptonising power of this particular organism, as is partly proven by the fact that in the small abscesses the process is found usually to be the result of the action of the Staphylococcus aureus, an organism that does not seem to possess the resisting powers of those concerned in the diffuse suppurations of Pyæmia.

Let us notice an abscess forming as the result of these organisms, having produced a capillary embolism. If there is furnished sufficient pabulum, they proceed to multiply and give off the products of their metabolism; round them is formed a clear hyaline ring, stainless, in which all structures are lost, from the action of some irritant soaking from the cocci into the tissues, they having undergone a coagulation-necrosis. The barracks being thus formed, in a few hours a ring of soldierly leucocytes are garrisoned around the invaded area; some of the outlying pickets press toward the centre, endeavouring to overcome the foe, while the inlying ones are constantly being reinforced. For a time the cannonading is too strong for the leucocytes, they being overpowered and destroyed, their carcasses only tending to increase the *débris*, whilst the organisms continue to propagate and force themselves through the picket line, by way of entrenchments formed of lymph spaces. At this point we have striking evidence of the powers of nature, as co-existent with these irritants is a well-marked leucotysosis, and the fruits of this condition present themselves in increased numbers, as recruits, finally succeeding in forming a dense, impenetrable wall surrounding the organisms; granulation tissue is thrown out around them, and being thus further separated from healthy tissue, either die for want of nourishment or from the effects of the poisonous principles of their own metabolism.

The symptoms of Pyæmia are characteristic—the metastatic abscesses and irregular temperature in different parts, together with the presence of an open wound, being diagnostic. There is greater emaciation, also, in Pyæmia than in Septicæmia. It occasionally follows diseases in which suppuration has occurred; *e.g.*, *febra pyogenica*—the similarity of which is most striking.

In surgery, owing to the extended use of antiseptics, these conditions are now seldom seen. However, the veterinarian is liable to meet with such lesions, following grossly neglected wounds.

Treatment in well-marked cases is very unsuccessful. The aim should be to avoid the further entrance into the system of these deadly organisms and, if possible, destroy or hinder the further propagation of those already within it. To do this with any degree of success, sanitary conditions must be carefully noted; external abrasions treated antiseptically, avoiding frequent removal of dressing; patient should have liberal amount of digestible, nutritive food, such as milk, eggs, oatmeal gruel, or beef-tea, together with small repeated doses of alcoholic stimulants; all of which tend to sustain strength and ward off collapse. Quinine, and other internal antiseptics and antipyretics, should be given in

large doses; hydrophenol, a lately-discovered antiseptic, about half as powerful as corrosive sublimate, and non-poisonous, may be tried.

To prevent possibility of spread, a patient suffering from either disease should be removed to separate quarters, and surroundings disinfected.

PROLAPSUS ANI IN A HORSE.—SLOUGHING AND RECOVERY.

Under the care of Ernest E. Batt, M.R.C.V.S., Brown Institution, London.

REPORTED BY L. SAVOURNIN.

THE patient was a bay gelding, eight years of age, in fair condition, and had been kept at his usual work up to the 20th of September last. On the following morning he was found with "something wrong under his tail." Professional aid was called in, when it was found that the rectum was prolapsed. The bowel was returned, but the owner could not give details of the procedure adopted, nor any information throwing light upon the cause of the accident. Within twenty-four hours the bowel was found again protruding, and the owner, being unable to incur further expense, brought the animal on the 25th September to the Institution.

During this interval gangrene had set in, and the bowel presented the appearance of a rounded nodular mass some eight or nine inches in diameter, and of various shades of colour from dull-red to black. The mass consisted of two portions laid side by side, between which was the entrance to the rectum. The lower half of the right portion, and a small part of the left, were black and gangrenous, and could be broken down with slight force. A strong smell of putrefaction was present.

After washing the part, a 3 gr. morphia suppository was placed in the rectum, the exposed mucous membrane smeared with compound ointment of galls, carbolised oil applied to the gangrenous patches, and a pint of linseed oil given as a drink. A limited amount of soft food was prescribed.

Next morning the patient was thrown and chloroformed. The protruded part was pulled out to some extent, a needle with stout twine doubled was passed through the base of each half, the needles cut away, and the four strings thus left were tied so as to completely strangulate the mass, which was left to slough.

Progress was both rapid and satisfactory, as the following notes will show:—

27th.—Condition of parts about the same. No apparent pain. Same treatment;

30th.—Mass is much diminished in size and somewhat dry on surface;

October 1st.—Several hard and dry portions of the strangulated bowel came away when touched.

An occasional dose of linseed oil given to keep the bowels relaxed. Also suppositories, in conjunction with ointment locally.

2nd.—Several more portions, black, hard, and almost dry, came away with the fingers;

3rd.—The remaining portions, with the ligatures, came away;

5th.—External appearances perfectly normal, and when the hand is introduced only some thickening can be felt on the floor of the rectum, about four inches in.

Little, if any, pain and no systemic disturbance were observed throughout, and the health and appetite remained good.

8th.—Discharged cured.

February, 1890.—Inquiries show that the owner kept the animal for nearly three months, during which time he worked and remained well. He was then sold and lost trace of.

A NEW CHLOROFORM INHALER.

BY F. RAYMOND, F.R.C.V.S., ARMY VETERINARY DEPARTMENT, WOOLWICH.

MESSRS. ARNOLD have requested me to write a few lines about a new chloroform-muzzle they have made for me, which contains some modifications upon the Carlisle bag. The old muzzle is a very good one, but having made constant use of it I found it had imperfections:

1st.—It was too small for very big horses' heads.

2nd.—It was not air-tight at the top if used on very small horses.

3rd.—The leather blind attached to it is quite unnecessary—in fact, out of place; because the eye has to be watched during the administration of the anæsthetic.

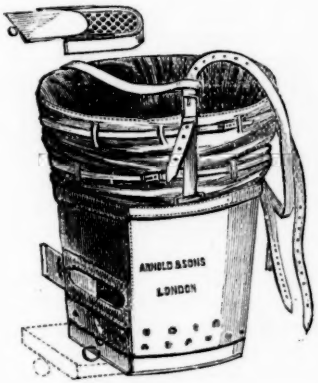
4th.—The leather button, after much use, bulges inwards and prevents the sponge-tray being pushed in smoothly.

5th.—The sponge and sponge-tray are too small for large doses, and as the sponge is soldered down it cannot be removed for cleansing.

All these defects have been remedied in the new bag.

I have also introduced a sliding cover to the sponge-box, and

slide to the muzzle, with a view to regulating the quantity to be inhaled. This will prove of service where the patient is very



nervous, as some thoroughbreds are. The slide on the sponge-tray will also prevent any chloroform from evaporating until the tray is *in situ*.

THE RELATION OF MONADINA TO PERNICIOUS ANÆMIA, EQUINE AND HUMAN.

BY R. W. BURKE, F.R.C.V.S., ARMY VETERINARY DEPARTMENT, ATHLONE, IRELAND.

PERNICIOUS Anæmia of the horse, associated with monads, was first prominently brought before the profession by Professor Eugen Fröhner, of the Berlin Veterinary University, although some other veterinary writers had preceded him on the Continent.

I have recently tried to show that this disease is equally prevalent in our horses in India, and is known under the vulgar name of *surra*, the pathology of which is still regarded by many as a mystery, although I have brought forward sufficient evidence to prove that it is essentially Pernicious Anæmia.e

With regard to the human disease, I quote an xtract from the *British Medical Journal*, of February 8th, 1890:—

"It is stated† that Professor Klebs, of Zürich, who has made a thorough examination of the blood of many patients suffering from Influenza, has found in it enormous masses of flagellate

* See "Tropical Diseases of the Horse," by R. W. Burke, chap. ii., pp. 23-52.

† *Wiener Med. Zeitung*, February 4th, 1890.

monads. These were of two forms: a smaller with very active movements of the flagella, and a larger with much slower movements. In specimens stained with methyl blue, Professor Klebs observed that the monads were sometimes on the edge of the red blood-corpuscles, and sometimes inside them. They are said to resemble the hæmatozoa of Pernicious Anæmia, and the plasmodia found by Laveran in the blood of patients suffering from Malaria."

I have in my work (*ante*) shown that similar monads (*plasmodium malariæ*) may be found in Intermittent and Remittent Fever of the horse, seen in India.* Klebs acknowledges that in those cases in which he observed "flagellate protozoa in the blood in very large numbers" there was "a repeated occurrence of febrile states, generally in the form of intermissions" (*Centralb. f. Bact. u. Parasit.*, No. 5, vii., 1890).

The existence of protozoa in the blood in Malarial or Intermittent Fever (the *plasmodium malariæ*) is undoubted, and Dr. Klebs assumes (*British Medical Journal*, February 15th, 1890) that in those cases in which he noted the presence of monads (*Rhizomastignia* of Bütschli) there was a repeated occurrence of febrile states, generally in the form of intermission.

In the face of the above evidence, it forms a large item in the list of my wonders that "surra" should find no definite place in the veterinary pathology to-day.

I append the literature of the disease as seen in the horse, for the readers of the VETERINARY JOURNAL.

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* Op. cit., chap. xii., pp. 152-158.

THE LARYNGEAL OPERATION FOR ROARING.

SINCE the adoption of operation on the larynx for the cure of Roaring among Army horses, a considerable number have been sold for various causes, some of which causes had no relation to the operation (lameness, age, vice, etc.), while others were more or less connected with it. It is a matter for regret that when troop-horses are sold, they, as a rule, cannot be traced subsequently, and therefore the result of operations or the progress of disease or defect cannot be ascertained. In only one instance has the history of a troop-horse operated upon for Roaring, and subsequently cast, been followed up, and as it is interesting, and is probably that of others which have been sold, it is given here.

The mare (G 49) belonged to the 14th Hussars, which regiment is now stationed at Brighton, and was sent to Woolwich to be operated upon in 1888, as she was a very bad Roarer. The operation was performed on November 20th, and she was returned to the regiment in January, 1889. On inspection, and after a severe test, the Principal Veterinary Surgeon found her and three others which were operated upon in the same month at Woolwich (and which are still at their duty in the regiment) quite fit for fast work, so far at least as the respiration was concerned. Greatly to the surprise of those who knew the fitness of the mare, the Inspector-general of Cavalry had her cast, and she was sold on October 31st. As she was bought by a veterinary surgeon in Brighton, Mr. Spinks, who knew her, directions were given to Mr. Spooner, veterinary surgeon of the 14th Hussars, to ascertain how she was performing her work. He had her brought up to barracks; her breathing was so natural that but for the scar in front of the larynx (and which had to be closely looked for) no one could have told that she had undergone operation there. On February 17th, Mr. Spooner writes:—

Dear Dr. Fleming,—I enclose a letter received about G49. All that remains for me to say, is that she was operated upon at Woolwich and returned here on the 12th January, 1889, when the orders relative to exercise were strictly carried out. I always considered it one of the best cases, for previous to the operation her breathing was so bad that she could not keep up in a ride (an easy pace in the riding school). You saw her yourself at your last inspection, and I believe remarked at the time what a very little noise she made. At the Inspector-general of Cavalry's inspection on September 20th last year, all the horses operated upon were put to a severe test on the Downs, and contrary to my opinion, this was one of two selected for casting. Yours sincerely,

W. B. SPOONER.

The following is Mr. Spinks' note to Mr. Spooner, under date, February 15th:

Dear Sir,—In reply to your inquiries about the chestnut mare (G 49) I purchased when cast from the 14th Hussars. My first knowledge of the case was during the time I was in charge of the regiment while you were on leave, and on September 11th I examined said mare in the Riding-school; she then made a slight noise, but was very fresh and well, and in my Return I stated her, "About the same, performing her duty well." I again examined her on the 9th October, and made similar remarks. I purchased the said mare on the 31st October, 1889. The following day I rode her on the Downs, and the noise was scarcely perceptible. Since that time she has been ridden by many of my clients and myself, and we have failed to detect any signs of Roaring. Any further particulars I shall be pleased to furnish you with, should you require them.

Yours very truly,

RICHARD DEWING SPINKS, M.R.C.V.S.

This mare should not have been sold from the Army, as she was a capital young trooper; but it was to the advantage of Mr. Spinks, who will, we hope, again report upon her respiratory condition in the course of some months.

Editorial.

THE ADMINISTRATION OF ANÆSTHETICS.

Into the discussion as to the relative safety of ether and chloroform in the production of anæsthesia in man, or yet whether death occurs at the lungs or heart in him when the administration of either of these agents proves fatal, we do not intend to enter. It would appear, as the result of long experience in the use of chloroform, that with ordinary care accidents should be extremely rare, if not altogether unknown, from its employment in veterinary practice. This drug would seem to be preferable to ether as an anæsthetic for animals, for various reasons, and it is the agent which is, perhaps, most frequently resorted to for the production of unconsciousness in them during the performance of protracted and painful operation, or when muscular relaxation is essential—as in the reduction of dislocations, scrotal or inguinal herniæ, etc. The cheapness of the drug, the ease and rapidity with which it can now be administered, together with its safety, should induce veterinary surgeons to adopt it whenever the avoidance of severe pain is desirable—which it generally is, or when tranquility in the animal to be operated upon is essential to the rapidity and success of the operation.

Economy in the use of the chloroform and in time, as well as to ensure safety to the animal and a quick return to consciousness when the operation is completed, is obtained by the use of the bag which excludes air altogether, and compels the animal to breathe pure chloroform only. Insensibility is brought about in a very few minutes with a very small quantity of the anæsthetic, and anæsthesia can be maintained for a long time by fresh quantities without inconvenience; even without a skilled assistant.

Should the respirations become very slow and the visible mucous membranes purple, then attention should be given to the patient and the drug withheld. In the very exceptional instances in which danger is to be apprehended, as when the intervals between the respirations are very long, and these are very shallow or very profound, a bucket of cold water dashed over the face and occiput is generally sufficient to restore matters to their normal condition in a brief space. It must not be forgotten, also, that artificial respiration can be induced in animals as promptly, perhaps, as in mankind.

The exceedingly remote risk of accidents should not deter veterinary surgeons from availing themselves of the great advantages conferred by anæsthesia—indeed, they should consider it their duty to resort to it whenever humanity or necessity demands.

ECLAMPSIA IN THE CANINE SPECIES.

In the *Annales de Méd. Vétérinaire* for February, Professor Reul makes some observations on this pathological condition observed in bitches which are rearing puppies. Those who have much experience among such animals have met with cases in which there were marked nervous symptoms—a kind of paresis or paralysis, with intermittent convulsive seizures—occurring soon after parturition. This state has been designated Eclampsia, or Convulsions of nursing bitches. The malady is a serious one, its manifestations being as prompt as they are energetic; and they are so startling as often to lead the owner to fancy that his dog has suddenly become rabid.

In human medicine the name Eclampsia has been given to two convulsive diseases, one of which is observed in infants (sympathetic or idiopathic convulsions of infancy), and the other during puerperality.

Eclampsia is manifested by convulsive attacks which succeed each other at more or less wide intervals, though sometimes they are close upon each other; Puerperal Eclampsia in woman shows itself during the last months of pregnancy, and during parturition or soon after. Every day people are encountered who appear to be astonished when told that the same maladies are met with, with some exceptions and variations, in man and the domestic animals, as if the grand lines of organization were not alike in both, and as if the numerous causes conspiring against health and life did not extend their injurious and deadly action to one and the other.

As in human Eclampsia, we find the disease presenting itself also in two forms in the domestic creatures: general or partial convulsions in young animals on the one hand, and convulsive attacks accompanied by paralytic decubitus in bitches which have just pupped, on the other hand.

It is the *Eclampsia of nursing bitches* which Reul more particularly treats of; and he remarks that he considers it to be a *functional* disease of the nervous system, no constant anatomical lesions having yet been discovered. It is developed suddenly after parturition—either during the same day or within the two days following this important physiological act. Reul has witnessed it in a bitch just about to pup. He considers that a great analogy exists between what he terms "Vitulary Fever" (Parturient Apoplexy?) in the cow and Eclampsia in the bitch, and asks whether the first is not the representative of the second in the bovine species and *vice versâ*. He maintains that there is a striking resemblance between the circumstances which precede and accompany, or follow the evolution of one and the other of these affections peculiar to parturients.

Reul has only observed Eclampsia in the higher breeds of dogs—such as the best-bred Black-and-tans, Yorkshire and Toy terriers, Pugs and Greyhounds, once or twice in Pointers, but never in other breeds. He intentionally places the Black-and-tan breed first, as he has most frequently seen cases of the disease in it. The common dogs appear to be free from it. Besides breed, other conditions are in operation; these are to be found in well-constituted primiparæ in good health, fat, and which have pupped easily. Reul saw a bitch which was attacked three times at three successive parturitions; the first attack was very serious, but the others were of less gravity.

As occasional causes, chills, but more especially a violent *morale* impression acting on the bitch which has just pupped, have been cited. Taking away one or more of the puppies, fear, anger, or prolonged absence of the owner, have a greater effect than cold in producing Eclampsia.

The disease appears suddenly: the bitch is very agitated, and moves about restlessly in the kennel, sometimes so awkwardly as to tread on her puppies;

if she leaves the kennel, it is only to return to it immediately, dragging the posterior extremities, or limping on a hind leg, and remaining there. The eye is glistening and the physiognomy pitiful and anxious; in a few minutes the creature is immovable from paralysis, and, stretched out on her side, is incapable of moving a step, or even of stirring one of her paws. She pants, and in the open mouth the tongue is seen to be as blue-coloured as that of an animal nearly asphyxiated, while she emits piercing painful cries. Generally the nose is cold and damp, the pulse is hard, tense, and quickened; the skin is hot and dry, the mammæ become flaccid, and the puppies cry because they can extract no milk from the teats, so that, unless artificially fed, they are in danger of perishing. The bitch neither feeds nor drinks, and no fæces or urine are passed. An examination *per vaginam* discovers the rectum filled with hardened excrement, and the bladder distended as in cows suffering from Vitulary Fever. She becomes unconscious and no longer cares about her progeny, though some animals become savage, and will bite the hands of anyone who tries to help them, so that the owner may suspect the existence of Rabies.

The disease follows an extremely rapid course, and often terminates before the end of the first day, by death, if careful attention has not been bestowed; by recovery, if the treatment now to be described is timeously resorted to:—

1. The puppies should be taken from the patient, and fed artificially until she is cured.

2. The bitch should be bled at the saphena vein. The blood will be found to be plastic, thick, and readily coagulable, flowing with difficulty from the vessel, but as it escapes a notable amelioration will be observed in the condition of the patient. In order to increase the escape of blood, it is often necessary to rub and squeeze the limb vigorously, and move it actively in flexion and extension.

3. An ice-bag should be applied to the cranium.

4. A hot cataplasm should be applied to the abdomen, and enemata of tepid glycerine administered.

5. Every half-hour a spoonful of broth should be given, to which the following must be added:

Sulph-Sodæ	15	grammes.
Nit. Potass	5	„
Aquæ	80	„
Syrup Æth.	20	„

6. Apply vigorous friction along the spine and to the limbs with a stimulating liniment—opodeldoc is the best.

7. The patient should be kept in a dark place away from noise, and in a moderate temperature—about 60° Fahr. The position must be changed from time to time to prevent stagnation of the circulation.

This treatment has never failed in Reul's experience, and he confidently recommends it.

When convalescence sets in, the creature is as if intoxicated for some hours, and staggers and stumbles, but her maternal instincts return, and she seeks for her progeny, which may now be restored to her. It may be remarked, however, that she cannot sustain them before twelve or fourteen hours after recovery, as until that time the mammæ are flaccid and empty.

THE VALUE OF CREOLIN (JEYES' FLUID) IN MEDICINE AND SURGERY.

JEYES' sanitary preparations have for a considerable period been attracting a large amount of attention among surgeons and physicians, as well as veterinary surgeons, more especially on the Continent, where they have been extensively tested and employed. The powerful disinfectant and germicide properties of the chief compound, Creolin, or Cresyl, as it is named in France (Jeyes' Fluid), have been attested by the highest medical, sanitary, and chemical authorities, and are proved beyond a doubt. Creolin, which is derived from coal tar, like carbolic acid, is far more potent than it as a germicide, antiseptic, disinfectant and deodorant, while it possesses the additional great advantage over it of being devoid of all toxical properties, and instead of being irritant it is anodyne, as well as an excellent hæmostatic and styptic. For these reasons it has been preferred by many, in medicine, surgery, and gynæcology, for all purposes for which carbolic acid, corrosive sublimate, or iodoform has hitherto been employed. There are a large number of preparations for different purposes in veterinary practice sold by Jeyes' Company, and a considerable list of formulæ has been drawn up by Professor Frœhner, of the Berlin Veterinary High School, who, in his "Arzneiverordnungslehre für Thierärzte," has given an excellent description of its action and uses. In the "Wochenschrift fur Thierheilkunde und Viehzucht" for 1888, the well-known German veterinary surgeon, Dr. Albrecht, published a series of articles demonstrating its utility in dressings for accidental wounds; in Castration; Sandcrack; operations on the brain; Thrush; foot fistulæ; parturition; *Erysipelas pedum;* Erysipelas; Mammitis; Scabies; Eczema rubrum, vesiculosum and impetiginosum; as well as internally in Indigestion, Diarrhœa, Hæmoglobinæmia, Bronchitis, and Pharyngitis.

More recently, Professor Peuch, of the Toulouse Veterinary School, has added his testimony in the "Revue Vétérinaire" for December, 1889, and his experiments are so interesting that we quote them here.

His researches related to the following diseases:—

ANTHRAX, GLANDERS, AND TUBERCULOSIS.

They were made with a 2 per cent. solution of Jeyes' Fluid, which durin five minutes was exposed to the virulent material derived from the said maladies. This material was obtained in the following way:—

1. *Anthrax.*—The experiments comprised two series: in the first one, a solution of Jeyes' Fluid was made to act on the pulp of fresh spleen taken from guinea-pigs infected with Anthrax; in the second series, the solution was mixed with pulp diluted with five parts of pure water; this solution was subsequently filtered.

First series.—Two sheep, two rabbits, and four guinea-pigs were divided into two lots, each comprising one sheep, one rabbit, and two guinea-pigs. One of these lots was used for controlling, the other was inoculated with infected pulp which had been treated with a 2 per cent. Jeyes' Fluid. The inoculations were effected by hypodermic injections, equal quantities of material being used in each case.

The control animal was inoculated with 10 minims of a liquid obtained by rubbing 15 grains of rat infected with Anthrax with 30 minims of filtered water. It died in the course of about fifty-four hours.

The second sheep was inoculated with 10 minims of a liquid obtained by rubbing 15 grains of infected rat with 30 minims of a 2 per cent. solution of Jeyes' Fluid, keeping the two in contact for five minutes. The animal survived.

The control rabbit was inoculated with 7 minims, and the two control guinea-pigs with 3 minims of a liquid obtained by rubbing 15 grains of the pulp of Anthrax spleen with 30 minims of filtered water. All three died

from Anthrax (Bacillus anthracis)—one of the guinea-pigs in the course of forty-two hours, the other guinea-pig and the rabbit in the course of about fifty hours.

The second rabbit and two other guinea-pigs were inoculated, the rabbit with 7 minims and the guinea-pig with 3 minims of a liquid obtained by mixing 15 grains of splenic infected pulp with 30 minims of a 2 per cent. solution of Jeyes' Fluid, keeping the two in contact for five minutes. But one of the guinea-pigs died of Anthrax in sixty-eight hours, and the other also died from Anthrax seven full days after inoculation.

Second series.—The experiments of this series were made on four guinea-pigs, divided into two equal groups.

The two control guinea-pigs were inoculated each with 3 minims of a liquid obtained by diluting 15 grains of fresh splenic pulp infected with Anthrax with 75 minims of distilled water, and filtering this mixture through paper. One of the guinea-pigs died after forty-two, the other after forty-six hours.

The two other guinea-pigs were inoculated each with 3 minims of the former liquid, on which an equal part of a 2 per cent. Jeyes' Fluid solution had acted during five minutes. These two guinea-pigs survived, but they did not acquire any immunity from Anthrax, because when three weeks later they were inoculated with fresh infected pulp alone they died from the disease after the usual lapse of time.

2. *Glanders.*—Fifteen grains of discharge derived from a donkey affected with acute Glanders were mixed with a 2 per cent. Jeyes' Fluid solution. These matters were left in contact for five minutes; subsequently 45 minims of this mixture were injected into the subcutaneous tissue of the neck of a sound donkey.

This operation caused the appearance of an abscess on the spot where inoculation had taken place, but no symptoms of Glanders. Pus derived from the abscess inoculated into two guinea-pigs did not have any effect. The 2 per cent. Jeyes' Fluid has therefore destroyed the poison of Glanders. On the other hand six guinea-pigs, divided into two equal groups, were inoculated with 7 minims of the following mixtures:—Three with a mixture of discharge of Glanders with ordinary water, according to the proportion of 1 : 2; three others with the discharge mixed with 2 per cent. Jeyes' Fluid. Three guinea-pigs of the first experiment contracted Glanders, whilst the three others escaped completely.

3. *Tuberculosis.*—Fifteen grains of spleen from a tubercular guinea-pig, which had been inoculated with milk from tubercular cows, was finely rubbed with 75 minims of ordinary water. The liquid is filtered through paper, and two guinea-pigs were with it inoculated in the femoral region, each receiving 7 minims. A like portion of this liquid was mixed in equal proportions with a 2 per cent. solution of Jeyes' Fluid, which are left in contact for five minutes, and at the end of this time were injected under the skin of two guinea-pigs, 7 minims being again used each time.

Thirty-six days after this operation the four guinea-pigs were killed; the two control animals inoculated with tubercular liquid only presented very distinct tubercular lesions. The glands of the region where the inoculation had taken place were filled with caseous material, tubercular granulations were spread all over the peritoneal membrane, the spleen was sprinkled with tubercles, it was deformed, nodular, hypertrophic, the liver also shows a number of tubercles, and the lungs to a less extent. The two guinea-pigs inoculated with tubercular liquid, previously treated with a 2 per cent. Jeyes' Fluid, also presented tubercular lesions. Glands of the inoculated region, peritoneal membrane, spleen, liver, and lungs show very manifest tubercular nodules, but they were less numerous than in the case of the control animals.

Conclusions.—From the experiments thus reported, the following results may be drawn :—

Jeyes' Fluid under the conditions as stated above—*i.e.*, with the dose inoculated—the concentration of the Jeyes' Fluid solution and the time of contact produces—

(1) Destruction of the Anthrax bacillus as found in the fresh splenic pulp—*i.e.*, in the state of filaments.

(2) Destruction of the bacillus of Glanders. The solution also assists in annihilating the virulence of discharge derived from Glanders.

(3) The bacillus Tuberculosis resists the action of 2 per cent. Jeyes' Fluid unless the contact with the latter is prolonged for more than five minutes.

It may be worth while referring here to an interesting note on the usefulness of Creolin in the Distemper of Dogs, published by Dr. Saint-Yves Ménard (a name not unknown to the readers of the *Recueil de Méd. Vétérinaire*), which was published in the bulletin of the Société Nationale d'Acclimatation de France for April, 1889. In this note Ménard says :—

"In the month of March, 1888, Dr. Duchesnes asked the author to give the new disinfectant called Cresyl—containing cresylic acid as a base—a trial in the different departments of the Jardin d'Acclimatation; the author at once complied with the request and began to use the preparation at the 'maternity' for dogs; first a solution was employed for washing, afterwards the disinfectant was applied in the shape of a powder dispersed by the aid of a very simple and convenient hand pulverizer.

"The results obtained surpassed the highest expectations; the epizoöty raging at the time gradually abated, the death-rate declined and the Distemper seemed to disappear altogether.

"We first thought that the abatement might be accidental and temporary, but by continued observation we have come to the conclusion that the great improvement in the sanitary conditions of our institution has really been brought about by the systematic use of the disinfectant. Numbers of young dogs have since been sent away after weaning without their ever having been afflicted with the Distemper.

"Our conclusion has been confirmed by a control-experiment we had occasion to make at about the same time. During last summer several bitches were, for the purpose of whelping, installed at our country farm, Comtesse, near Melun, where partial isolation but no disinfection was practised. Here the offspring was diminished by the disease in the most formidable manner.

"Another fact has recently occurred to strengthen our confidence in the antiseptic value of Cresyl. The Distemper did not even reappear at our kennels during the beginning of the winter. But on the 3rd of January, 1889, a pack of twenty foxhounds were imported from England, and these foxhounds brought the disease with them and infected several of our dogs. Consequently, the antiseptic precautions were still more rigorously observed, and the result was that the epizoöty ended with a loss of only six dogs.

"At present the sanitary conditions are perfect.

"The beneficial action of Cresyl cannot possibly be explained more eloquently than is done by the following statistics of the mortality at our institution before and after the use of the disinfectant.

Year.	Dogs born.	Dogs dead between 1st day and 2 months.	Dogs sent away at the age of 2 months.
1887 before using Cresyl.	551	374	177
1888 after using Cresyl for ten months.	550	284	266
		90 less in 1888.	89 more in 1888.

"In drawing this communication to a conclusion, I have to state that I do not intend to attribute to Cresyl a specific action against the microbes which cause the Distemper of dogs. A similar effect might perhaps be obtained by the use of several other antiseptic substances. I have even to confess that the chemical composition of the product called Cresyl is unknown to me, and that for this reason I first hesitated to use the patent article. But my hesitation was soon overcome when I found that I had to deal with a preparation at the same time efficacious, economical, non-poisonous, and easy in its application.

"The results of my first experience with the new disinfectant have been so favourable that I cannot help drawing the attention of dog-breeders tot he subject, and I feel sure that a more general use of Cresyl will give ample opportunity for confirming my own experience."

From these references it will be seen that Jeyes' Fluid possesses particularly valuable properties, which should render it one of the most useful agents in the pharmacopœia of veterinary surgeons.

IMPROVED BITCH FORCEPS AND CROTCHETS.

SUGGESTED BY F. WAINWRIGHT ANDERTON, M.R.C.V.S.LOND.,
THE CANINE HOSPITAL, HALIFAX.

THE above instruments were made by Messrs. Arnold and Sons, London, for Mr. Anderton, who does not wish to claim the idea; but he has altered

human forceps to the line of the bitch's vaginal passage, and to the size required.

The chief advantages are:—

Their easy application to the head of the fœtus and their safety both to bitch and pup.

The disadvantage found with the old forceps was the difficulty in driving the blades down both sides of the pup's head at once. In these (the new)

forceps, one blade is passed first and the other then gently pushed down the opposite side of the pup's head, and the blades locked at the neck. In the old forceps the operator frequently had to take off the forceps, even after he had them fixed in position, owing to the mucous membrane getting into the forceps along with the pup's head; this could not be avoided, as the instruments were so short in the neck and fixed at the point. In the new forceps, however, as the blades are placed in position separately, there is room for the accoucheur to guide the instrument into position with the finger. The crotchets are curved, so that the pup's head can be raised when it is depressed below the mouth or os, or for raising the legs, etc. etc.

Proceedings of Veterinary Medical Societies, &c.

CENTRAL VETERINARY MEDICAL ASSOCIATION.

At the meeting of the Society, held at First Avenue Hotel, Holborn, on the 6th February, Mr. W. Hunting, President, in the chair, the following paper was read by Professor Woodroffe Hill, F.R.C.V.S., on

Rabies and Muzzling.

Mr. President and Gentlemen,—Your worthy Secretary, Mr. Villar, was some short time back kind enough to pay me the compliment of an invitation to read a paper before the members of the Central Veterinary Medical Association, and this invitation being seconded by your esteemed President, Mr. Hunting, it afforded me much pleasure to accept the same.

My motive in selecting the subject of this short paper has been actuated by the desire to ascertain your professional views on a question which should greatly concern the veterinary profession—the members of which are somewhat divided in opinion as to the good likely to accrue through the enforcement of the muzzling order, and whether the attempts to make it universal are justifiable.

From time to time our daily papers have teemed with correspondence on such subjects as "Should women smoke?" "Is marriage a failure?" etc. But no question appears to have exercised the public mind to such a hysterical extent as that of Rabies and Hydrophobia—science, sentiment, and politics have been mixed up in the heart-burning controversy on the muzzle as a protective agent—individuals have lost their heads and tempers in dealing wit this question. Members of Parliament and Government officials have run the gauntlet between muzzlers and anti-muzzlers. Veterinary and medical opinions, theory and practice, ignorance and experience, imagination and reality, fiction and fashion, have severally joined issue in the periodical combats on this vexatious question of muzzling as a process for the prevention and extirpation of Rabies.

When I assert, gentlemen, that thousands of dogs have been ruined, and not a few killed by muzzling, I make the assertion with a full knowledge of its truth and the power of proof.

The muzzle, of whatever description, is in my opinion an instrument of

more or less torture, and its application is only excusable under the most exceptional circumstances, such as uncontroilable ferocity in a dog at large, or when anæsthesia is impracticable in surgical cases. As a reliable measure for suppressing or stamping out Rabies, it is, to my mind, absolutely useless.

In years gone by the muzzle was only applied as a safeguard against mischievous dogs. No one appears, so far as I can gather, to have even suggested it as a likely agent to stamp out Rabies, and I fancy Messrs. Blain and Youatt, the highest authorities on canine matters of their day, would have been very much astonished had such an idea been propounded to them.

I am of opinion, gentlemen, that a not far-distant future will reveal to the present advocates of the muzzle that an unjust punishment has been inflicted on our canine friends, and the said advocates, if alive, will find the rare disease of Canine Rabies in the next century not one whit rarer than it has been in the present one. That it may from time to time have a spontaneous death apart from legislative measures, and to arise, as we have evidence to show (though I admit exceptionally) from spontaneity. But the advocates of the muzzle may, and probably will find, that persistent canine mental irritation caused by muzzling, and resulting in a morose and savage disposition, has left its evil influence on successive canine generations.

Now, gentlemen, assuming the muzzle to be beneficial, its application must of necessity be *universal* and *constant.*

The former, especially in outlying districts, would be impossible, and the latter actual cruelty.

Dr. Dolan, in his work on "Rabies and Hydrophobia," remarks "We must not forget this muzzle cannot be an efficient safeguard unless it is as M. Bouley says, rivetted to the dog's neck, as the manacle is to the foot of the galley-slave, and that night and day the animal should wear it, in-doors as well as out-of-doors." I venture to say, better destroy every canine specimen than be perpetrators of such an outrage. But when Rabies threatens to become prevalent, the same writer further observes, "the muzzle should be resorted to, not as a prophylactic, but as an adjuvant," or, as I take it, a badge, a mark of distinction, a sign that Rabies is about, and all unmuzzled dogs should be seized, though Heaven only knows why. But it is a badge, or mark of distinction and ready means of reference to ownership, that I as one of a multitude opposing the half-hearted measure of muzzling, ask for nothing more or less, with strict regulations applicable thereto. Registration appears to have fully answered the purpose in Bradford. Dogs have been easily traced by their registered number and responsibility brought home to the owner, and the system according to the Chief Constable's evidence has been generally appreciated, whilst he states it has *most certainly* been instrumental in reducing the number of cases of Rabies. The objection to the name and address being always advertised on the dog's collar by a metallic number, is removed by the name and address of the individual being written opposite such number in the registration book for reference, if necessary.

Has the muzzling order, as adopted in London, fulfilled the sanguine expectations of its supporters? The Minister of Agriculture in his speech to the Kent Deputation on the 22nd of last month stated, "In London where the order had been strictly enforced for six months a slight decrease was shown." But is a slight decrease, in the face of a short incubative period, and the strongly expressed opinion that muzzling is efficacious, a satisfactory answer to those who think and know otherwise?

Further, Mr. Chaplin made the following contradictory statement to the views he is supposed to hold and which advocates of the muzzle emphatically

urge. "I declined," he says, "to adopt or enforce a universal muzzling order for two reasons which seemed to me to be conclusive. I do not believe that so extreme a measure as that is essential for the purpose, and I am perfectly certain that in the present state of public opinion it would be absolutely impossible to enforce it. (Hear, hear.) A muzzling order remember, to be universal, must apply to Scotland and Wales as well as to England; but in Scotland no cases of Rabies have ever occurred since the returns, which we received, were first made to us. And as a matter of fact, I believe there has been no case of Rabies known in Scotland for a great number of years. The same thing, I am told, applies to Wales and to Cornwall, and many parts of the South-west of England, and an immense part of England besides." Mr. Chaplin's comparison of the muzzle and the bit is not a good one—we can use our dogs, especially hounds, efficiently without the former—but we cannot employ our horses without the latter. An easy comfortable muzzle is an article of imagination; I recently witnessed the ludicrous sight of two terriers in Oxford Street, wearing muzzles sufficiently large for a St. Bernard. Their mouths, it is true, had full play inside the cage, but when they came into a crowd it meant a full stop, and other *contretemps*. I fail to see that past experience has taught us to expect that the muzzling order, as Mr. Chaplin thinks, will shortly be successful. I venture rather to the opinion, gentlemen, from the tone of the Minister of Agriculture's speech, and the character which the discussion has now assumed, that considerable uncertainty of opinion as to the measure adopted in the Agricultural Department exists—and much dissatisfaction is prevalent outside in the kennel world.

To glance back for a moment to the past, how is it in the statistics of deaths in England from Rabies since 1838 up to the present time, that no case occurred in 1843, '44, '45, and '46?

In Ireland none in 1871 (when raging in England), '72, '73, and '74?

That in Scotland only two cases occurred in nineteen years, viz., between 1855 and 1874? Was this immunity due to muzzling? Certainly not.

The question as to the best means of preventing or stamping out a disease is one to be argued and solved by those individuals who understand the disease in all its bearings—and, therefore, gentlemen, I maintain this question of muzzle utility is essentially one for veterinarians and canine pathologists to deal with.

Laymen have discussed it under the impression, formed by the dog-owning public, and not altogether unfounded, that canine veterinary surgeons can be counted on the finger-ends. That the latter are few and far between must unfortunately be admitted. At the same time I take strong exception to any layman not possessing thorough experience in canine matters, and without practical knowledge of disease, occupying the position of a scientific canine lecturer, public instructor, or an authority on Rabies and Hydrophobia; and the reflection cast upon the veterinary profession by even the small amount of scientific support such men receive is to be deplored. Lectures by proxy are not lectures based upon individual experience. The erroneous impressions that may be conveyed by scientific argument and theoretical addresses has been recently illustrated in the absurd statement that muzzling will stamp out not only Rabies but also Distemper.

How, gentlemen, can the muzzle stamp out one, or the other, especially Rabies?

Any individual with but a crude knowledge of canine Rabies, knows that a flow of saliva at some period of the disease, containing the deadly specific virus, is an accompaniment of Rabies—and assuming a rabid dog retains his

muzzle, which has never yet been proved, some of the fatal saliva must of necessity fall to the ground. No muzzle can prevent this, least of all the so-called Regulation one.

Perspicacity and olfactory keenness are leading canine traits, and the common habit of the dogs to inspect, sniff at, and often lick up the secretions of other canines, presents a loophole of danger no muzzle, excepting the old calf skin or leather bucket one, can obviate.

Therefore, should any wounds or abrasions exist about the lips, nose, or mouth of a dog free to exercise his inquisitiveness, Rabies may be as readily contracted by inoculation through this source as by a rabid bite, *i.e.*, assuming the poisonous saliva has not been too long exposed to atmospherical influence.

But, gentlemen, supposing that *universal* and *constant* muzzling associated with an equally established period of quarantine (for the former would be useless without the latter) resulted *pro tem.* in the extinction of Rabies, what is to prevent the country from re-infection after the order is withdrawn? Bardsley's suggestion of eight months' quarantine meets with this reply from Dr. Dolan:—

"It will be seen at once by those who know anything about veterinary sanitary matters, that a strict quarantine for dogs for such a period or even for the comparatively short space of two months is absolutely impossible at present, and perhaps will always be so, and also that supposing the disease to be confined to the dog species, and that the quarantine to be religiously observed, or rigorously enforced, other countries might not think fit to submit to the serious inconveniences arising from this measure, and consequently we should, in all probability, have the contagion introduced into this country again in a very brief space."

It is somewhat remarkable that in all the addresses given and letters penned by the various members of the Society for the Prevention of Hydrophobia, when urging the muzzle and laying down the law of other countries, the exemption from muzzling in France has never been mentioned. On this point a strict and suspicious silence has been maintained. I put the question more than once to Professor Victor Horsley at the Westminster Palace Hotel meeting, but failed to elicit a reply.

In Paris, the nursery of cultivated Rabies, there is absolute freedom from the muzzle, and yet dogs, especially poodles, are being continually drafted from there into this and other countries. Now the French are perspicuous in their scientific views, and I therefore think the Parisian authorities would long ere this have enforced the muzzle had they felt assured of its efficacy—but I am informed on good authority that they do not believe in it.

I need scarcely tell you, gentlemen, that one characteristic phase of canine Rabies is the readily-excited ferocity through obstruction or interference, therefore the aggravation of the mental irritation in a rabid dog by the presence of a muzzle, is or should be obvious. Again, except as a passing illusion, I need not mention that muzzling a healthy dog will not prevent him being bitten by a rabid one.

Mr. John Colam, whose opinion is generally deserving of attention, observes: If statistics are any guide, it does not seem probable that muzzling would stamp out Rabies in twelve months. In Prussia, for example, where muzzling has been enforced for the last quarter of a century, no one pretends that it alone is effective in preventing the spread of Rabies. It goes hand-in-hand with registration, census, collars, and tally. After a decade of muzzling, cases of Rabies went up from 9 to 66. The number fell again, went up to 69 in 1885, in a city of less than a million inhabitants, and ruled with an iron hand.

In London, in the same year, when there were no muzzling regulations in force, the number was about 70 in a population of about four millions.

Professor Gunther, of Berlin, remarks that it is obvious that muzzling, which was powerless to prevent one out of every 366 dogs kept in Berlin in one year, and one out of every 300 in another, from becoming rabid, can have no influence on the suppression of the disease.

Dr. Sondermann, of Munich, remarks that in Munich, during a septennate of continuous muzzling, the number of dogs was reduced to one-half, while the number of persons bitten had actually increased, owing to the irritability of dogs at home, induced by perpetual muzzling.

Here are a few comparative statistics :—

Vienna.—In 1881 and 1882, when the muzzle was not compulsory, the number of persons bitten by rabid dogs was 5 and 2 respectively; in 1883 and 1884, when muzzling was enforced, it was 3 and 93 respectively.

In Saxony the number of rabid dogs was steadily reduced (without the use of the muzzle) from 121 in 1879 to 10 in 1883.

In Baden the number went down from 43 in 1875 to zero in 1885.

Professor Bourrel, of Paris, draws attention to the fact that *nine out of ten persons bitten are bitten in their own houses and not in the streets.*

Mr. G. R. Krehl concurs with those who think that a collar with metal tally would be useful, and that any system which made it practically impossible to evade payment of the dog tax would enormously benefit the Revenue.

Col. C. A. Cobbe, in regard to Registration *v.* Muzzling, observes: "One noticeable difference between the two systems is that a collar and badge would be always worn by a dog at home and abroad, whereas his muzzle would be taken off at home and he might slip out without it."

Algernon West., K.C.B, Chairman of the Inland Board of Revenue, believes in the registration and badge system. In Massachusetts no muzzle is in force, but every dog has to be registered.

Again, muzzling in Berlin did not prevent an increase of Rabies in the years 1865-1867, 1872 and 1874. In Denmark muzzling has been abandoned through being considered ineffective.

Rabies comparatively speaking is a rapidly developed disease in the lower animals. The incubative period "lasting to many months," as asserted by Mr. Kerslake, is but another illustration of a layman's blunder or ignorance. Two to five weeks was the incubative period observed in the Foxhound Kennel outbreak some years ago, and my experience since has met with no longer period than the last-named maximum.

Enforcing registration, rousing the Inland Revenue officers to a sense of their duties, and making dog-owners more personally responsible, will, in my humble opinion, be conducive to far greater good than the unsatisfactory and aggravating law of muzzling.

I do not presume to doubt that all gentlemen, members of the veterinary profession, present to-night, have the welfare of those creatures it is their privilege and province to attend, at heart, for I believe our profession as a whole, is thoroughly humanitarian, and for this latter reason I have not enlarged upon the cruel aspects of the muzzle, or introduced more than I considered necessary of what a certain clique of individuals would term through their favourite phrase "sentiment."

Of one thing, gentlemen, I am certain, and that is, that the attitude of the veterinary profession in connection with the Dog Laws of this country, as associated with Rabies, is being carefully and anxiously watched by an observant public—dog-loving and otherwise ; and without wishing for a moment to appear dictatorial I venture to say that I think it is a matter of regret our profession did not take the initiative at the very onset.

It has been stated by a veterinary surgeon that "as experts we had nothing to do with legislation," but in my humble opinion only sound legislation on such a question as the prevention of Rabies or any other animal disease, can arise from the due consideration of, and carrying into effect the opinions and advice of *experienced* veterinary experts—and therefore if but indirectly, we should have a voice in legislation on such matters. Canine Rabies is as essentially a veterinary subject, as Hydrophobia is essentially a medical one.

In conclusion, gentlemen, I wish to treat with all respect the convictions of those individuals who honestly differ from me (for I wish it to be understood that I am here this evening simply as a veterinary surgeon and independent of any association). I shall nevertheless be pleased, in the discussion which follows my short address, to hear the question calmly and practically fought out—fought out apart from sentiment and thoroughly in the interests of human and canine subjects, and if it can be proved to the satisfaction of anti-muzzlers that universal muzzling (not exempting any single breed or specimen of dog) for a period of six or even twelve months, associated with a little quarantine, will simply stamp out effectually the disease of Rabies—then I for one shall be inclined to alter my views, past and present, but until such proof is forthcoming, which I am far from anticipating, I must conscientiously remain firm to present opinion.

As an old canine veterinary practitioner interested in the welfare of the dog and the advancement of my profession, I offer these few remarks, gentlemen, for your consideration.

On the conclusion of Professor Woodroffe Hill's paper, the following discussion took place.

Mr. EDGAR: In the first place I must express my astonishment at hearing the remark from Professor Hill that he is undoubtedly of opinion that Rabies is spontaneous. I know in the olden days it was considered that Rabies might be spontaneous, but I certainly thought that that idea had been long ago given up. It seems to me such a difficult thing to prove when the statement is made that the disease is spontaneous. May not a dog be bitten and yet you may never be able to trace when or how he was so bitten? Again, I would ask has there ever been a case of Rabies proved where a dog has been shut up for twelve or eighteen months previous to its going mad? If not, it seems to me impossible to say that Rabies is of spontaneous origin. We all know that dogs are in the habit of wandering from place to place, and, until they can be completely isolated, it seems to me that no one can say they have not been bitten.

In regard to muzzling, I think Professor Hill very unjustly condemns the muzzling of dogs. I perfectly agree with him that the muzzle is a most uncomfortable apparatus for a dog to wear, but at the same time we must not forget that the question for decision is whether the comfort of the dog is to be studied, or that people are to be bitten and suffer from Hydrophobia. In my opinion, as far as I have been able to ascertain, muzzling has never been efficiently and properly carried out in any part of this country. I remember some time ago when the muzzling order was enforced in a district where Rabies was supposed to prevail, I saw, time after time, unmuzzled dogs running about; I do not care whether it was for five minutes, an hour, or a day; there was the opportunity of biting, or of being bitten, and I say until muzzling has been carried out efficiently and well, it ought not to be condemned as an ineffective measure. At the same time, I think the muzzle should be made as comfortable as possible, and I think leather muzzles, as they are now made, are certainly approaching perfection as nearly as possible. I certainly do not like the wire muzzles that are being

used. I cannot say, because I have had no experience, whether registration would have the same effect as muzzling, but I do not see how it could. For instance, a mad dog may be running about, and although he may have a registered number on, what is the good of tracing that dog home to his owner when he may have already bitten half a dozen dogs or people? A dog may be registered, but his owner cannot prevent him running out into the streets, but if he has a muzzle on it is impossible for him to bite. I was rather struck with one remark Professor Hill made; he said that a healthy dog having a muzzle on will not prevent his being bitten by a rabid dog; but I would venture to point out that if the rabid dog had a muzzle on he could not bite the healthy dog.

Professor HILL: Nobody has ever seen a mad dog with one on.

Mr. EDGAR: Exactly, and that proves that the muzzling order has not been efficiently carried out, but if the rabid dog had been muzzled he would not have been able to have bitten the other dog. We hear a great deal about the condemnation of the muzzle in other countries. In those countries where it has been condemned can it be said that it has been properly and efficiently carried out? I venture to think not. Again, Professor Hill said, that it should be left to veterinary surgeons to decide on the best means to be adopted to stamp Rabies out, but I would ask him what is to be done while this vexed question is being decided? Are we to go on being bitten and have Rabies about us so that dogs can be bitten and go mad? I think also that the statement that veterinary canine surgeons can be counted on one's fingers is rather a sweeping one. I would ask the Professor whether he has enquired of all veterinary surgeons, whether they are canine veterinary surgeons and know anything about it. I think it hardly follows that because they are not putting their opinions in print before the public and publicly stating that they are canine veterinary surgeons that they are not, therefore I should not like that statement to go forth unchallenged to the world. Then again, with regard to the question of foreign importation. In regard to that, it seems to me that it is not for us to consider what foreign countries like when a dog is coming to England. It is for us to decide what is best for our own country, therefore if they object to putting dogs in quarantine for a short time the only thing they can do is to keep their dogs to themselves.

With another statement I was rather amused. Professor Hill said:—"If those in favour of muzzling can satisfactorily prove to the anti-muzzlers, &c." Now I am afraid that would be a very difficult thing indeed to do, because, when an anti-muzzler takes up a view it is very difficult indeed to convince him that he is in error. The important question which we want to decide amongst ourselves is this—How is Rabies to be stamped out? and as far as my experience at the present time goes, I can see no more efficient remedy than a universal system of muzzling properly carried out.

There is one other point which I had almost overlooked. So far as my experience goes the muzzling order has at least had one good effect, and that is that it has got rid of a tremendous lot of mongrels that used to run about the streets, for which probably a license had never been paid and which were no good to anybody, for no one would own them. I think those are all the observations I have to make.

Mr. SAMSON: Our friend, Mr. Hill, seems to have implied, in fact I think he states plainly, that he considered the muzzling of dogs would be cruelty to them. I beg to say that I fail to see it. I have several dogs of my own, and after having tried several different kinds of muzzles I think I have at last found a very suitable muzzle for each dog—a muzzle which is not in any way cruel. I am of opinion that, if the muzzle is properly fitted, there

is no more cruelty in using it than there would be in an easy pair of shoes upon the feet of a man who suffered from corns. No doubt you may have to try many before you can get one to fit the dog really properly and comfortably, and, of course, it may be at first a little irritating, but even that will only be for a very little time, and then the dog will get accustomed to it, just in the same way as an unbroken colt gets accustomed to a pair of girths, or the crupper against his tail. Mr. Hill says that thousands of dogs have been killed by muzzling.

Professor WOODROFFE HILL: No, I did not say killed, I said "ruined."

Mr. SAMSON: It is much the same thing. I fail to see how they have been ruined. There is one fact about which I am very positive, and that is, that since the order has been in vogue it has cleared the streets, and indeed the whole country, of thousands of useless mongrels which were most likely to be affected with Rabies, and if it has not been proved that muzzling puts a stop to Rabies, it certainly proves that it reduces the number of dogs, so that there is not such a great chance of spreading the disease from one to another. In my small practice alone I have destroyed about fifty dogs, brought by the police, of which the greater number have been useless mongrel dogs, of no value whatever.

As to the theory of the spontaneous origin of Rabies, I think that is yet to be proved. I do not think we really know whether it is or is not spontaneous. It is certainly contagious—we do know that. I should like to make one remark in reference to its being of spontaneous origin. I do not think that they have Rabies in Norway. They are very particular about importing dogs. You have to pay a very heavy tax indeed for dogs there, and I think the dog also has to be isolated for a long time before it is allowed to go. When I was in Norway last summer, from what I could make out, I could not hear from any one that they had ever heard of such a thing as a rabid dog. If Rabies is spontaneous why should it not break out there just as in other countries? If the muzzling order is brought into effect at all it should be enforced throughout the country. I think the Minister of Agriculture must have been very badly advised indeed to only have dogs muzzled in one part of the country and let the others go free. In the case of cattle I can quite understand an order of that kind, because if Pleuro-pneumonia breaks out in a herd of cattle there is no trouble in confining those particular cattle, and isolating them, but you cannot isolate dogs; and, therefore, if the muzzling order is enforced at all it should be carried out throughout the country, and for a long period of six, nine, or twelve months. There is one other remark I have to make. I think I understood Mr. Hill that the period of incubation is from two to five weeks, was that so?

Professor WOODROFFE HILL: That is so.

Mr. SAMSON: Then I must beg to disagree. There is no doubt there have been cases where it has taken only two to five weeks to develop, but I think there are many more where it has taken a much longer time—at least, that is my opinion.

The PRESIDENT: We shall be very glad to hear any visitor speak upon the subject under discussion.

Dr. HARTNELL: Mr. Chairman and gentlemen, I wish to take advantage of the kind invitation which has been issued by our worthy chairman. I am here as a medical man who takes a very keen interest in dogs, and I may say that I have had some cases of so-called Hydrophobia come under my immediate notice. In the course of my professional experience those cases have been very few indeed, and I think if veterinary surgeons would devote themselves a little more to enquiring into the number of genuine cases of Hydrophobia amongst people, and not the false cases, they would be conferring a

great boon upon the public generally. I said false cases, for there are many such; people, especially old ladies, get intensely nervous over their dogs, and they sometimes fancy they have got Hydrophobia when, as a matter of fact, it is not Hydrophobia at all. I was once called in to see the case of an old woman who, when I entered the room, actually commenced to bark. She suffered from an intense form of a nervous affection, but she had no Hydrophobia. The one genuine case of Hydrophobia which has come under my notice happened about eight years ago, in Yorkshire. I was practising in Keighley at the time, and I was called in one evening to see a working man. I should like to be allowed to give you a history of the case, in order to show you that men who are fairly well qualified, as I myself thought I was, to judge, really do not know what Hydrophobia is when they see it. I was called in to see the man one evening and sat by his bedside. He was a mill-hand working at Mr. Craven's Mills in Keighley. He was a stout muscular fellow, about six feet high, and was lying in bed in a stupid and somewhat comatose sort of state. His mother had sent for me, and I went to examine him. I found his temperature was perhaps half a degree above normal and his circulation but little quickened. I knew that the man was very ill, yet I felt I did not know what was the matter with him. I sat with him perhaps ten minutes, and thinking at first that he was a malingerer I asked him whether he wanted to get off work, but he said he did not. I then gave him some ordinary medicine to get his skin to act. I saw him the next morning and then did not notice any marked change. I saw him again at half-past seven in the evening, and just as I was in the act of leaving the room he was offered a glass of water to drink, and I saw just a slight spasm of the glottis as he was taking the drink of water. I at once sat down and asked him if he had had anything to do with dogs; he said No, he had never had a dog in his life. I pressed him, and then he said, "Oh yes, about three weeks ago I was at so-and-so"—mentioning a public-house—"and there was a little terrier under the seat, and as no one would put him out I seized hold of him to put him out and he bit me in the thumb." I examined his hand, and found there was a cicatrix from the bite. I then telegraphed to Dr. Dolan, of Halifax, who is a great authority on Hydrophobia, saying I thought I had a very interesting case which he might like to see. He came down, and we also consulted Dr. Cheffers and five or six other medical men, who saw the case, and I think we did everything in our power to save the man's life, but it was no use. That was a typical case of Hydrophobia. I will not detain you any more by going into the matter, but I may say that in all my experience (and I have been professionally engaged in the West Indies and other places abroad), I have seen a lot of practice, I have only seen one genuine case of Hydrophobia in all my life, and I believe that most of the cases that are reported as being Hydrophobia cases are not Hydrophobia cases at all. I do not know whether any of you gentlemen have been to Brazil, but when I was there I noticed that the dogs roamed about in large numbers and in the most reckless manner; in fact, they act as street scavengers, notwithstanding which I never heard of a single case of Hydrophobia there. They are regular scavengers, and they are never muzzled, and I think it would forward the matter under discussion if some enquiries were made as to the prevalence of Hydrophobia in Brazil. Another point which is well worthy of your notice is the fact that there is no Hydrophobia in Scotland, and but very little in Scandinavia. Our Minister of Agriculture seems ill-advised in stating that it is due to the muzzling of the dogs there, for dogs were not muzzled there. But I believe they are much influenced by temperature. I think in a cold country you will find less Hydrophobia than you will find in a warm country.

Mr. ROWE: I beg to endorse the remarks of the last speaker, that unfor-

tunately there is a great deal of ignorance in the medical fraternity of London in the diagnosis of Hydrophobia in their own subjects. It was my unfortunate province some years ago, when I think there was a scare of Hydrophobia, to have a patient brought to me for what was assumedly a sore throat. I had not then seen many rabid dogs, and I did not think that this was one. I recollect perfectly well opening the dog's throat, and inserting my fingers in his mouth and feeling down to see the appearance of the throat; doing this caused the dog to vomit all over the carpet, which very much upset the old lady who brought him. The very next day that dog disappeared, and the woman died within three weeks of Hydrophobia, but for a full week the medical man who attended her had no idea that she was the subject of that affection until the convulsive fits became so pronounced that he could have no possible doubt as to the disease. That dog bit three dogs. I remember that each one died rabid. Mr. Hill, who has just read us his interesting paper, may remember that he came to see me on that occasion, and saw the dog in the loose box which was the subject of care. That dog was rabid and died rabid, and was one of the three which were bitten. I was one of the veterinary surgeons who attended as a delegation before Mr. Chaplin on behalf of the non-muzzling business, but I want you to understand that I in no way have identified myself with either of the two sides. Mr. Chaplin led us to understand that the statements which we had made should receive his serious attention, and that he believed to a great extent that the veterinary surgeons who composed that deputation were actuated by the best motives. When we had finished he told us that there was a counter deputation waiting to see him composed of those who believed in the efficiency of muzzling. We thereupon retired and met that deputation, and amongst them I may tell you, to my personal knowledge, there was but one veterinary surgeon—perhaps there is no need to mention his name, therefore I will say no more. Now that was on a Saturday afternoon. On Monday morning the new edict was in print in all the daily papers. Now, that to my mind made both the counter deputation and our deputation a mere fiasco, and I resent it accordingly, and I hope that my statements will be taken for what they are worth, and not in any way neglected. I happen to know that within three days afterwards the Minister of Agriculture had expressed his opinion to one of my clients that for two years he had wanted to muzzle the dogs. All I can say is, if he is going to do it do it, but there is a law for the rich and a law for the poor, and I would remind him that the public are getting rather sore on this point. If muzzling is to do as much good as it is intended to do, I contend that sporting dogs and shepherds' dogs should also be properly treated the same as other dogs are.

I may mention in regard to foreign countries that I have visited Italy, Antwerp, Belgium, and Switzerland. In Antwerp the common idea is to muzzle dogs because they are beasts of burden. In Italy I have never seen a dog muzzled. In the south of France I have seen very few; in the north of France they are, it is true, more or less muzzled. I am not aware whether that is required by the law, and I am not acquainted with any professional experts who could tell me whether it is the law there to do so or not.

I just wish to call attention to one other point. Dr. Dupré wrote a letter and described an attack of Hydrophobia in his dog. He said that the dog was bitten at the beginning of the year, and did not die until the end of the year. In the face of the generally accepted opinion surely such an opinion as that is fraught with very little interest.

Mr. WOODGER: I am afraid I have not very much to say upon this subject. Although my experience with dogs may not perhaps be so large as some other gentlemen who are here, yet I do see some hundreds of dogs professionally

every year, and I must say that I have never seen but one dog which has been upset by the muzzle. After a dog has had his muzzle on for a few hours I have found he gets accustomed to it, and, as I say, I have never seen but one animal who could not be kept muzzled. I have frequently gone into people's houses, and have taken up the muzzle in my hand, and, directly I have done so, the dog has come to me to have his muzzle put on, because he wanted to go out—dozens of dogs have done that. That being so, I can see no cruelty in the muzzle at all. As to driving them mad, I cannot agree with Mr. Hill at all, nor can I agree that it is ruining them. I not only do not see how it can ruin thousands, but I cannot see how it can ruin even one. I will give you my experience of mad dogs. Before this order for muzzling came into operation—I may have been in a neighbourhood where Rabies was perhaps rather rife—I cannot tell you how many dozens of cases I had, but I know very well in three weeks I had 28 rabid dogs brought to my place; an order came into force just after that, and for about a fortnight I had one or two fresh cases come in, but since that time I had not a rabid dog for three or four years. Then they gradually increased; I got one perhaps in a month, then perhaps for a couple of months it would get better, and so it went on until just previous to this muzzling order coming in, when I had on an average two or three rabid dogs a week. Unfortunately, three people last year were bitten by rabid dogs, and were sent off to M. Pasteur in consequence. One was bitten in my own place. It was his own fault, for he would go and touch his dog after he was told it was mad. He started off to Paris, and now he has returned quite well; in the other case the wound was cauterised and the patient was told by his medical man that he was all right, but he died from Hydrophobia. Since this muzzling order has been in operation I have had only two cases, and they were within three weeks or a month after the order came into operation. I have not had one since.

Mr. SAMSON: Do you mean the extension of the order?

Mr. WOODGER: I mean since this fresh order. I was speaking of six or seven years ago, when I had so many cases.

Now in regard to registration, I do not see what good registration will do at all. I will give you an instance. A man living about half-a-mile from my place came down to see me to pay an account and he had his dog with him. As we were talking he suddenly said to me, "While I am here can you tell me what is the matter with my dog?" I said, "Do you notice anything amiss with him." He said, "Do not touch him; he is not at all good-tempered at the best of times, but now he is a brute. He has had three fights to-night coming down already." I said, "Oh, does he fight very much usually?" He said, "I never knew him fight so much as he has now; he has bitten three dogs. I could not see, of course, what he did to them, as it was dark, but he rolled them all over pretty well." I said, "Is that all you noticed about him?" He said, "No, he has got a peculiar bark." I said, "Can you make him bark?" He said, "Yes." I said, "Just make him bark then," and he did so. I stepped back at once, for directly I heard the dog bark I said, "Your dog is rabid," but he would not believe me, although he had got a little scratch on his finger which he wanted me to cauterise at once. He would not believe that the dog was mad until two days afterwards he was trying to tear everything to pieces that he came near, and, paralysis setting in, he was then destroyed. But suppose that dog had been registered, that registration would not have prevented him from biting those three other dogs, but if he had got a good muzzle on he could not have broken the muzzle that night, because he was not so bad then, although he might have managed to have done so the next day. I do not see what registration will do at all as a preventive agent, and I think effectual muzzling is the only thing to prevent Rabies

spreading, and as to the cruelty of it, I think that is all rubbish—there is no cruelty about it. The dog that is not sufficiently under command to have a muzzle put on him, I think ought to be destroyed. I may say, gentlemen, I think I love the dog as well as any one in this room—I am a perfect lover of the dog, and as an illustration of this I may tell you that a dog will always come to me if he is ever so vicious—there is not one dog in a thousand that I cannot do anything with, so it is not because I hate dogs that I advocate the muzzle. I have very nearly been bitten on more than one occasion by mad dogs, but, notwithstanding that, it is because I love them that I want to see them muzzled. I think Professor Hill said that the statistics in one year showed that out of a population of 4,000,000 there were only 76 rabid dogs. I should like to know when that year was, because I believe there were a good many more.

Professor WOODROFFE HILL: I said people suffering from Hydrophobia, not rabid dogs.

Mr. WOODGER: I beg your pardon, I understood you to say rabid dogs. I know there are plenty of dogs killed in the streets which are not rabid—that is quite certain, and there are plenty of rabid dogs which no veterinary surgeon sees at all; but the Government have never got any statistics up to the present time that I am aware of, as to the number of rabid dogs in London; I think you would be quite safe in putting them down by the thousand.

Mr. ROWE: I should like to be allowed to add a few words, if I may be permitted to rise again. Mr. Moore, in his evidence given before Mr. Chaplin, referring to the very point which has just been referred to, said he thought veterinary surgeons should be requested to give a report of the cases occurring within their province, and Mr. Chaplin at once took a note of that suggestion, and said it was a point he was very much obliged to Mr. Moore for, and he should bear it in mind in the future. Whilst I am on my feet I should also like to say upon the subject of importation, that I have known that Norway and Sweden for some years past are intensely sensitive on the question of the reception of dogs, even for sporting purposes, without a clean bill of health, and I have had before now to give a certificate to that effect, before the owner could go fishing or sporting in Norway or Sweden. I do not know whether it is apparent to you, but the contention I wanted to support when I went to the House of Lords was that I thought, in regard to clearing the streets of the mongrels, that a ticket or label on the collar were all good in their way, but doubtful of application, and that the best method to adopt was to set a thief to catch a thief. If the Inland Revenue were more conscientious and more exact in their imposition of the tax, and paid those who informed against those who evaded the tax, I think you would get a complete answer to those who advocate muzzling, and the muzzle would become an absurdity, and that I endeavoured to say before the House of Lords.

Mr. HURNDALL: There is one point in the paper, which was mentioned by Mr. Edgar, and which struck me as wanting to be cleared up, and that is—Is the disease capable of spontaneous origin? If it can be proved that it is, then it is certain that muzzling can be of no use whatever. You may stamp it out for the time being, but it will spring up again very shortly, or within perhaps six or twelve months; but, I confess, like Mr. Edgar, I was under the impression that all scientific men had come to the conclusion that Rabies was not a disease of spontaneous origin, and that it was one of contagion. This seems to me a point which we ought to be perfectly clear upon. If there are some among us who think that the disease is capable of arising spontaneously, as has been already

suggested, we must appear in a very ridiculous position before the public. We cannot wonder, if one set of veterinary surgeons are of opinion that the disease is spontaneous, and others contend that it cannot arise unless the dog has been bitten by another that is rabid, if the public think we are a very uncertain profession. I should like very much to know what reason Professor Hill has for considering that the spontaneous origin is the correct theory. I understood him to say that he considered in some cases it might be spontaneous, but in most it probably was not. There is one point in favour of the view that it is not of spontaneous origin, and that is in connection with Australia, for I believe I am correct in saying that Rabies is unknown there. About six months ago I was called in to examine a pair of great Danes, which had been purchased by a gentleman in Brockley with a view to certifying as to their health. In the course of conversation he informed me that he had been rather surprised to learn that he would be obliged to subject these dogs to six months' quarantine before they could be landed; but as he attached so much value to them he did not hesitate to do it. Does it not seem somewhat reasonable if Rabies is unknown in Australia, and all dogs which are imported into that country are subjected to such a long period of quarantine, that therefore the disease cannot be spontaneous in its origin, and is not present because no rabid dog has been admitted into the country? Of course we are here to-night to give our opinions as to the most useful procedure to be adopted for stamping out the disease. Like Mr. Edgar, I confess that although the registration system is a good one in regard to the enforcement of the tax, yet I do not see that it is of very much service in connection with sweeping out the disease. It might perhaps tend towards that end in this way, that no dogs would have the tax paid for them which were not worth saving and which were not under proper supervision. If all dogs were properly watched every day, as I watch mine, one would then have the opportunity of coming to a conclusion when anything was wrong with them, and persons would be more disposed to keep them under restraint—it might assist to that extent—but, as one of the speakers said, the fact of a dog being brought to his infirmary on a particular evening, and the fact of his being registered, would not prevent him spreading the disease to the three other dogs which he had bitten on that occasion.

The next question is—does this suggestion of muzzling really seem the most reasonable and reliable way of sweeping away the disease? We can only express our opinions, and certainly, as far as it goes, although it is a matter of inconvenience, not only to the dog but also to the owner, to be obliged to put on a muzzle every time the dog goes out, and also to keep a constant watch that he does not go out without it, yet I think so far as the experience of the majority of us goes, we should say that muzzling properly carried out would effect the desired result. As Mr. Rowe emphasised his remarks because they would go out before the public, so also would I emphasise mine, and I would say it is necessary that it should go forth to the public that the muzzling order up to the present time has never been properly carried out. I will give you an illustration of that. Mr. Hill I think said there had not been an alteration in the order, but there has been. There was an alteration in the order at the end of the year. A notice came out in January in which there was this provision, and I am particularly interested in it because I happen to possess two or three greyhounds—"Foxhounds, and hounds in leash, and greyhounds are not now required to be muzzled." That is not known by the great majority of the police, I may tell you. A policeman stopped my groom the other day when he was out with two of my dogs, and warned him that if he appeared out again without a muzzle on those dogs

he should summon him. The man had previously been instructed by me as to what he should say supposing he was stopped in the road, so he simply told the policeman he must refer him to his master, and he added "if that is not satisfactory I can tell you that he has been down to the Inspector at Blackheath, and has gone through the order with him, and has satisfied him that the order does not require it." The policeman said, "I do not know anything about that; if I catch you again I shall summons you." Well, I do not know whether he has or not, but he will have the opportunity of doing it, because so long as the order exists in its present form, I shall not put muzzles on my dogs, because I do not think it is conducive to their comfort, as Mr. Hill has said; but at the same time I would, as an owner of dogs, very willingly put myself to the inconvenience, and my dogs also, of carrying out the provision, if I could only see the Order being properly carried out in an effective and thorough manner throughout the whole country, England, Scotland, Ireland, and Wales. I think the Order should be properly carried out and enforced, and no favour shown to anyone. Mr. Rowe has very properly remarked that £ s. d. has something to do with it. I know that such is the case, because when the Order first came out, for a long time the Woolwich draghounds were going about without any muzzles, and no doubt they would be doing so still had I not written to the Chief of the Police.

Just to show you how vexatious some of the proceedings are, I may mention that not long ago I had one of those plain strap muzzles on one of my greyhounds, and the other one had on one of the cage muzzles made of leather. Well, my man happened to go down to one of the Police Courts, and this dog with the plain strap muzzle was noticed, and he was warned; I received a letter from Major Tennant informing me that I had laid myself open to a fine of £20.

I have no hesitation in saying that my own conviction, from my personal experience, is, that if the Order was properly and efficiently carried out throughout the length and breadth of the land we should find that Rabies would be stamped out, and, as I am not a believer in its spontaneity, I do not think we should ever see it again in this country.

Professor PRITCHARD: I am not going to make a long speech, but there are one or two remarks which I should like to offer for the consideration of those who have spoken of muzzling as a means of stamping out Rabies, and its disappearance from the country from that time henceforth. I notice that all the speakers who are advocates of muzzling have used the words, or the term "properly carried out," or "thoroughly carried out," and I noticed also that not one of them has told us how it is to be "thoroughly carried out," or "properly carried out." They seem to have lost sight of one important fact (and I may say that the present occupants of this room are by no means the only gentlemen who have lost sight of the fact, for it seems to me to have been very generally lost sight of) that dogs are not the only animals that spread Rabies in this country. Let me tell you that if you are to thoroughly and completely carry out the muzzling system you must not only muzzle all the dogs—you must not only muzzle dogs whilst out in the streets, but you must muzzle them when they are in the house, and you must muzzle all the foxes, and you must muzzle all the cats. I lay particular stress upon the muzzling of the foxes, because it has fallen to my lot, and I dare say it has to a number of other gentlemen in this room, as I know it has to a number of veterinarians outside this room, to deal with outbreaks of Rabies in hounds, and I have very little doubt but that I could prove that in at least two outbreaks, the Rabies in packs of hounds was traceable to some of the animals being bitten by rabid foxes. Now this is a very important point, and very little has been said about it, and it is worthy of

the consideration of those who would argue that muzzling is to stamp out the malady.

There is just one other remark I should like to make with reference to the period of incubation. I am, I confess, rather surprised to find my friend, Professor Hill, put it at from two to five weeks. Surely it is well known that the period of incubation in the dog is very much longer in many instances. I had a case of two foxhound puppies that I saw bitten by a rabid dog. I was present when they were bitten, and I had an opportunity of taking care of them, and I can state positively, and I am glad to say that the gentleman sitting on my right can corroborate me, for he has reminded me that he can bear out my statement—I can positively declare that one of those hounds never was in contact with a dog, and never was outside a locked cage for a year and three months, and never showed a sign or symptom of the malady for that time, until one morning when it was suddenly seized, and in a short time died as rabid as any dog I ever saw in my life. The other I should say was attacked in eleven months. That, of course, was an instance where the dogs were actually seen to have been bitten by a rabid dog. They belonged to the Old Berkeley Hunt, the kennels of which are not very far from Watford. I had an opportunity of seeing them bitten by rabid hounds, and had daily opportunities of seeing them from that time to the time they were taken ill. Now this is a very important point which has more than one bearing. It has first of all a bearing on this point, that if we are to muzzle dogs at all we must muzzle them for a much longer period than is at present contemplated. There is one other expression of opinion I should like to make, and that is that I do not believe in the spontaneity of the disease. I believe that if you could get rid of all the animals which are rabid that you would never see the disease any more.

Mr. RAYMOND: Mr. Chairman, it is very little indeed that I have to do with dogs, but I should just like to add a few words to what has been said. Some gentleman has spoken about dogs that are loose, or scavenger dogs, in Brazil never having Rabies.

Dr. HARTNELL: Pardon me, sir, I did not say that; I said I did not know whether it was so, and suggested it would be worth inquiring into.

Mr. RAYMOND: Very well, it is the same thing for my purpose. I have never been to Brazil, and consequently have had no experience of what occurs there amongst dogs, but in India, where dogs also act as scavengers, I know that there are very frequent outbreaks of Rabies, and that those outbreaks are most disastrous in their effects, because the dogs go mad and travel about the country without control, and very often bite the natives, and I have known many outbreaks amongst the natives caused in that way. I look upon myself in this discussion about Rabies as being a sort of impartial onlooker, for I am not very much interested either one way or the other. What strikes me, however, is that one gentleman gets up and says the disease is spontaneous, and another one gets up and says it is not spontaneous, but neither of them bring forward a word of proof either one way or the other. Now I should like to hear them bring forward a little proof in order that I might be convinced one way or the other.

Mr. SLOCOCK: I have listened with very great pleasure to Mr. Hill's paper on the question of muzzling dogs. Before I go further I should say that I am a strong believer in the muzzling order. As an inspector I had several cases come to my notice during the summer months of last year. From the time the muzzling order came in, the number of cases gradually diminished, and at the present time it is a very rare occurrence that I am called upon to look at a dog even suspected of the disease. I know the order caused great friction amongst dog-owners at the commencement, but I really believe it was

more trouble to the dog-owners than to the dogs themselves. I think the dogs get used to the muzzle in a very little while, and if the dog is properly fitted with it there is no cruelty. I know that some small dogs do go about with St. Bernard muzzles on, but that is the fault of the owner, and I do not see that even then there is any cruelty. I noticed one remark of Mr. Hill's which I thought at the time was rather unfair to Mr. Chaplin, and that was with regard to the spread of the disease in Middlesex. I think Mr. Hill said there was no noticeable decrease in the disease in the Metropolitan district. I believe I am correct.

Professor WOODROFFE HILL: A slight decrease.

Mr. SLOCOCK: I think it ought to be taken into consideration that certainly within the last year Rabies has been greatly on the increase, and that had the muzzling order not come into force the cases of Rabies in the Metropolitan district would have been very numerous indeed. The point which I think Mr. Hill ought to have mentioned was that it was the Kent deputation who said that in the county of Kent (I am speaking from memory) there were three cases within a certain period, and in the corresponding period up to the present time I believe there are thirty-nine cases returned, showing, of course, a great increase of Rabies in that county, and a very grave reason why the muzzling order should take effect in that county. I think at the present time the muzzling order only extends to the districts in which Rabies is prevalent or on the increase, so that perhaps those districts which are not under the order might have reasonable claim to exemption. It has been suggested in regard to Rabies that temperature may have some effect; upon that point I think we are all agreed that we get as many cases in the winter as in the summer. I noticed that Mr. Rowe said that amongst the dog scavengers very little Rabies was seen, and I must say in connection with that until I was in a position to get the Rabies of a district reported I never used to see a case. We do not see them in valuable dogs very often, or in dogs which have got owners, the cases are generally those of stray dogs. In one case I knew the owner, for the simple reason that the dog was carrying the owner's name upon his collar. Now that dog was found five miles away from home, and I believe it is characteristic of the disease that in the early stages the dog will, if he can, break loose and leave his home.

The PRESIDENT: Well, gentlemen, it is getting rather late. It will take Mr. Hill probably a quarter of an hour or twenty minutes to reply, there may be many more gentlemen who wish to speak—I do not know. The question really is whether we shall adjourn the discussion until our next meeting or go on longer.

Mr. MOORE: Mr. Chairman, I was going to propose that we adjourn the discussion to the next meeting.

Mr. WOODGER: I beg to second that.

The Chairman then put the motion for the adjournment to the meeting, which was carried unanimously.

After some discussion as to the room,

Mr. SAMSON: May I ask one question about a case of Hydrophobia which was mentioned by a medical gentleman? was the history of the dog traced in that case?

Dr. HARTNELL: Yes, sir; I am very glad you asked that question. I traced the history of the dog and found that it had suffered from acute Rabies and was killed, and the man whom I attended, and who was bitten, was attacked with Hydrophobia about three weeks after.

An ordinary general meeting was held at the First Avenue Hotel, on Thursday, January 9th, 1890, when there were present twenty Fellows of the Society and twelve visitors.

Mr. William Hunting, the President of the Society, occupied the chair; correspondence was read from Messrs. Alfred Broad, H. Edgar, H. D. Gibbings, and James Simpson.

Mr. Henry Gray, M.R.C.V.S., of West Ham, was elected a Fellow of the Society, and Mr. W. Anthony Stainton, M.R.C.V.S., and Mr. Donald Gregory, F.R.C.V.S. were nominated for Fellowship.

Mr. A. PRUDAMES submitted to the meeting a Salivary Calculus, weighing thirty-eight ounces, which had been removed after death from the cheek of a horse upwards of thirty years of age; the nature of the tumour, which was attached to the cheek by a pedicle, was not suspected, and although it had existed for more than twenty years, it had apparently caused the horse no inconvenience, and his (Mr. Prudames) professional attention had never been called to it.

The following paper was then read by H. W. CATON, M.R.C.V.S., on

INFLUENZA OR EPIDEMIC CATARRH.

MR. PRESIDENT AND GENTLEMEN,—With your indulgence I will read you a few notes on the disease, relating my experience during the last twenty-five years, with a few remarks as to its history, symptoms, and treatment.

Influenza is spoken of as early as 1299 by Laurentius Rusius, as affecting the horses of Seville, when a thousand died. The symptoms exhibited then tally, as nearly as possible, with those of to-day, viz., drooping head, weeping eyes, loss of appetite, and hurried breathing. In 1648, Sollysel, a French V.S, describes it, with similar symptoms, as affecting the French and German armies, and considered it epidemical. Also in 1683 and 1693 affecting man, and again in 1699 it was very prevalent in Europe and America; again in 1727 and 1728 in England and Ireland; in 1732 Gibson describes it and speaks of it as being "catching"; 1743 Huxham speaks of it as affecting man and beast; and during 1850, '63, '64, '71, '72, '81, '83, and '89 it has raged with more or less virulence.

In 1863-4 I have a very distinct recollection of it as affecting the eyes of several farm horses at Stapleford, in Essex, and out of six horses I think there were only three that recovered their sight; and others went "stone blind," if I may use the term, which is very expressive from the fact that the eyes show that form of blindness owing to the exudation of lymph into the chambers of the eye, and may be noted as far almost as you can see the animal.

The Predisposing Causes

May be the following: hard and exhaustive work, bad feed, and sudde extremes of temperature—nowhere more experienced than in England, I should think.

That it is epidemic in character I do not think any one who has had any experience will deny.

It is more prevalent in the spring and autumn than at other seasons, owing I presume to the variable temperature at these times. There is some difference of opinion as to its contagious and infectious nature, and strong advocates, I believe, are to be found to support either side. I have never made any experiment to test the accuracy of either; and to my mind it is a matter that will stand a fair amount of discussion to arrive at a definite conclusion. It is accepted, I believe, as being contagious, but I have seen horses stand side by side, with no chance of removing them, and the companion not take it; this might arise from the peculiar idiosyncrasy of the animal, and his not offering a fit habitat for the germ to develop.

Certain it is that a stud is seldom attacked but several of the number be-

come affected. Why not all? They are all placed in a very limited area, breathing the same contaminated air, and in many instances fed and housed in one shed and worked similarly; yet perhaps 10 or 20 per cent. only are affected; several studs I have attended where the percentage has only been 10 to 15 per cent., and has assumed a variety of forms in each stud.

Nature and Symptoms.

Of the exact nature of direct or epizootic influences which determine the appearance of Influenza we know but little; the germ theory I believe has not been demonstrated, although I presume we must have an Influenza germ in these times.

Symptoms.

These are very protean in character, generally they may be divided into Catarrhal, Bronchial, Pneumonic, Pleuritic, Enteric, Hepatic, and Rheumatic.

Catarrhal.—In this form we get a quick weak pulse, dropsy of the conjunctiva, sore throat, yellowness of the mucous membrane, drowsy in appearance, paroxysmal coughing, threatening asphyxia, fæces dry and slimy, urine scanty and high coloured, usual duration from a week to a fortnight.

This form has been christened "Pink-eye," for some reason I cannot explain, and people take to new names with avidity, especially anything of foreign origin, and fancy it is quite a new disease. There always is a peculiar pink appearance of the eye in this affection, but it has only of late years struck some one to christen it so here.

Bronchial.—In this form we get a clammy mouth with furred tongue, difficulty of breathing, stupor, and frequently cardiac sympathy to a great extent.

Pneumonic and Pleuretic.—All the previous symptoms of stupor, etc., combined with congestion of the lung or pleura—in many cases both; with laboured breathing. If any previous disease has existed, the result is frequently fatal.

Hepatic and Enteric.—This form is frequently termed "Bilious Fever." It implicates the liver, causing serious inactivity, with a yellowness of the mucous membranes. Evacuations are pale and shiny, tongue furred and shrunken, urine scanty and thick, and pulse quick and wiry: the horse in slow griping pains, and thirsty.

Treatment.

As a rule of a very simple character, depending entirely on the form assumed. In the Catarrhal and Bronchial forms, head steamed with either hay or sawdust, throat dressed with stimulating embrocation or mustard, and repeated as often as the case may indicate; if very sore, and swallowing difficult, gargle carefully with nitrated water, or place some in the bucket, which should stand by the patient about a third full, so that he can moisten his mouth frequently, as he feels disposed; place cap or hood on, clothe and gently exercise, not more than ten minutes at a time and at a very slow pace, three times a day; give a loose box, short bedding, and plenty of air without draughts.

If the bowels are at all confined 4 oz. drench of Sodae Sulph. night and morning until fæces are of the desired consistency, and, to the same end, induce the patient to eat as much green food, carrots, or mangolds as he will.

Bronchial.—Treat similarly to Catarrhal, with the addition of counter-irritants to the sides and trachea, should there be extensive Bronchitis verging into Broncho-Pneumonia, which is not uncommon. This opens the question

of counter-irritation, whether correct or not, but my experience has led me to the conclusion that it is. I have seen more direct benefit from counter-irritation from mustard or blistering ointment properly applied than any amount of medicine, both in my patients and myself.

In applying the mustard (which I use 18 inches square) to a cart-horse, I either clip the hair off (to which clients have a most determined objection) or foment the ribs—from the shoulder to the last rib but two, and from the superior third of the ribs to the bottom of the false ribs—with water as hot as I can bear my hands in for ten minutes; then sponge the parts clear of water and apply the mustard, vigorously rub in for ¼-hour, and keep on the pillar reins till the irritation has passed off. The same treatment would apply to either the Pneumonic or Pleuritic form of the disease if severe, but the symptoms must entirely guide the veterinary surgeon as to whether simple fomentation of the sides with a cloth well kept wet and covered with water-proof, applied to the sides, would be sufficiently effective—a mild attack it would.

Internally I would administer Sodae Sulph., either in water, or dissolved and mixed with slop food, every time the animal was fed—say every three or six hours. If the animal is very low and eats comparatively nothing, I give ½-gallon of stout or beer, gruel, or a quart of stout with Sodae Sulph. ℥j., Spt. Eth. Nit. ℥jss, Liq. Ammon. Acet. ℥ij, every six hours.

Gentle exercise ten minutes at a time, warm clothing, fresh air, and loose box. Sanitary arrangements to be made as perfect as possible.

In the *Enteric* form, should evidence of great pain be present I give sedative draughts of Cannabis, or Tr. Opii, as often as the case requires, generally every three hours until relieved, enemas, and counter-irritants to the abdomen if necessary, combined with Liq. Ammon. Acet., Sodae Sulph.; all food scalded and given warm.

In the *Hepatic* form, I generally apply a mustard plaster to the region of the liver, and treat as in the former case.

Warmth, air, and good nursing are as essential as anything, combined with judicious exercise and management generally.

Sequelæ.

I have found that in animals having consumption of the lungs, roarers, shiverers, cases of defective sight, weak loins—in fact, with any defect—the disease is almost certain to show evidence in the parts affected and leave them weaker than before.

I treated a good mare that became a very bad roarer after three weeks' illness in the catarrhal form (she had no defect previously), and quite recovered her natural tone after a course of strychnine and iron, for another fortnight, and now is perfectly sound and working every day.

Another, a hackney I used to drive at Romford, it left her weak in the loins for six months, and she had to be driven with the greatest care to prevent her from squatting on her haunches when pulled up. She recovered perfectly.

Two with chronic disease of the lungs have had Purpura to follow, and died from Sphacelus of the lungs. Two have died of Endo-Carditis and fatty degeneration of the heart whilst suffering from this disease. One had recovered and gone to work—being a very excitable animal, and doing just three times the work that was ordered for her, she came in swelled immensely in all four legs, got down and exhausted herself in an hour.

In some cases I find excessive prostration, either if the animals are not stopped smartly, or if they are put to anything beyond light work, and for very short periods, say three hours at the time to start with; and then, if they get a relapse, it is almost sure to be the Pneumonic form from exhaustion, and if they are not very closely attended the result is likely to be fatal.

When last we met and Mr. Hunting asked me to write a short paper on Influenza, I little thought we should have had such a constant quantity of it forced upon us day after day in the papers. The name by this time sounds, to say the least of it, stale, but I hope the few remarks I have made upon it, may lead to a profitable discussion.

I do not attempt to place anything new before you, but simply to state a few incidents that I have noticed within the last twenty-five years' practice.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

ANNUAL MEETING AND DINNER.

THE annual meeting of this Society was held on January 31st, at the Queen's Hotel, Leeds. Mr. A. W. Briggs, Halifax, the President, was in the chair, and there were also present Professor Williams, Edinburgh; Mr. W. A. Taylor, President of the Lancashire Veterinary Medical Society; Mr. Nettleton, Northallerton, President of the Durham and North Yorkshire Veterinary Medical Society; Mr. W. Longhurst, Port Inspector, Hull; Mr. T. Greaves, Manchester; Mr. S. Longhurst, of the 10th Hussars; Mr. G. Carter, Keighley; Messrs. A. W. Mason, G. E. Bowman, R. L. Robertson and T. Exley, Leeds; Messrs. G. Pickering and H. Snarry, York; Mr. W. Lodge, Dewsbury; Mr. P. Deighton, Riccall; G. Whitehead, Batley; H. Pollard, Wakefield; T. Fletcher, Sheffield; J. E. Scriven and J. Clarkson, Tadcaster; S. Chambers, Kirkheaton; R. A. Philp, Hull; A. E. Harrison, Halifax; J. Appleyard, Ashton, J. W. Anderton, F. Summers, Leeds; P. Brownrigg. Alderman Mathews and H. Dryson, visitors.

The HON. SEC. announced that he had received resignations as members of the society, from Mr. Danby of Duffield, and Mr. Beck of Castleford, and letters of apology for non-attendance at the meeting from Mr. Pike of the Lancashire Society, Professor Walley, Mr. Leather, Liverpool; Mr. Cope, London; Mr. Axe, Doncaster; Mr. H. Cooper, Huddersfield, and Mr. Cameron, Medical Officer of Health for Leeds, and others. The Hon. Sec. read a letter he had received from the widow of the late Mr. Dray, thanking the society for the vote of condolence they had accorded to her.

On the motion of the Hon. Sec., seconded by Mr. Hanson, Messrs. F. S. Horner of Shipley, and Appleyard of Halifax were elected members of the society.

Mr. SCRIVEN nominated Mr. Franklin, Sheffield, and the Hon. Sec., Mr. Philp, Hull, as members of the society.

The President's Address.

The PRESIDENT then read the following address.

GENTLEMEN,—I am proud to occupy this chair to-day, and I thank you sincerely for the honour you have conferred upon me.

I have a feeling of partial regret, that you did not place your confidence in older and abler hands than mine. Of one thing, however, I do not hesitate to assure you, and that is this, that, during my year of office, I shall exert myself at all times for the welfare and interest of this Society.

I believe I am the youngest man who has had the honour of presiding over the destinies of this old Society, representing, as it does, the veterinary profession in this vast county of broad acres. I shall strive earnestly and willingly to guard the Society's reputation and honour, and I plead to you to-day to render me, severally and collectively, the co-operation and assistance without which the occupation of this chair would be made a duty of difficulty and reluctance.

The Society was formed in 1863, and looking back upon the honoured names of past-presidents I recognise the onus of my position. At that date I believe there were only two societies in existence. During this period of twenty-seven years, the importance of such associations has been fully recognised and acknowledged by the profession, which has awakened from its apathetic condition, and which now boasts of no less than eighteen or twenty veterinary medical associations.

Our financial position is not quite so good as heretofore, but the important leakage in our funds was one of which all are cognisant, and which went to render aid to the immediate relatives of a departed friend who for many years was the prop and mainstay of this Association. Antecedent to this our funds were considerably reduced by the handsome donation voted towards defraying the cost of building operations in Red Lion Square. On this score, therefore, we can found no complaint.

We have a large body of members, but I am sorry to say that the attendance is not what could be desired. I wish to establish, if possible, a better response to the roll-call, and I feel that such end will be best attained by providing a good bill of fare at each meeting (applause). Consequently I desire you to rally round me and supply food for discussion and other information of interest to your fellow-practitioners. Remember that unless some record is left behind, a man's knowledge and skill (however observant and skilful he may have been) dies with him, whilst by imparting knowledge to others and comparing notes generally, advantage ensues and science is often benefited.

In 1888, a resolution was passed that in future all papers for discussion should be printed and distributed to the members of the Society, at least ten days prior to the date of the meeting. I hope to see that step carried out in order that the papers may be taken as read, and that discussion may be opened at once. The time at our disposal at these meetings is all too short, and not the least profitable portion of it is that devoted to the relation of interesting cases. By taking papers as read we shall save time, and allow a longer and fuller discussion upon all matters of interest.

On many occasions I have heard cavilling remarks cast at this and kindred societies, but as a rule, these emanate from a spirit of contumely and ignorance.

I have read somewhere that there are spots upon the sun, and that some folks would rather draw one's attention to them than recognise the effulgence of the whole orb. Well! that is more or less our position. There may be faults and blemishes in our constitution, but on the whole we may congratulate ourselves upon the work done, and upon the accruing benefit. Here we enjoin and foster brotherly love and esteem, and the dissolution of those petty jealousies which are unfortunately so prevalent and rife in provincial towns and country districts. Here we have our eyes opened to the fact that others besides ourselves know something, and we have to respect their opinions. Life is short, and opportunities are rare; therefore let us embrace every opportunity afforded to us of increasing our store of knowledge and of learning to labour together and honour each other. There can be no doubt that these societies have exercised the strongest influence in raising the tone and status of our profession.

A word now with regard to our veterinary periodicals. The good old monthly journals have been superseded by the birth and maintenance of the *Veterinary Record*, a journal of which every veterinary surgeon may well be proud. Personally I swallow its contents each Saturday morning with an appetite only equalled by that for my breakfast. Through its columns we are enabled to keep in touch with the doings of our various veterinary medical

societies, and with the proceedings of the Council of the Royal College of Veterinary Surgeons, which are not only given to us *literatim et verbatim*, but are also handed down to us in such good time, that interest in the subject-matter has not subsided. I well remember its reception in the middle of 1888, and the adverse criticisms which it met on all sides; but, gentlemen, its advent was welcomed by all true veterinarians, as a boon to the profession it was created, and claimed to represent. I venture to assert it has more than fulfilled the modest representations made by its editor at that time. Otherwise than through the pages of the *Record*, I regret that I am not acquainted with Mr. Hunting, but I maintain that his courage in introducing a publication which should place before the profession the precise political aspect of that profession has merited the good wishes and sympathy of his brethren. For many years we had wanted a rapid means of communication with each other, and with the body politic and corporate, and Mr. Hunting has furnished us with a medium we ought all to take advantage of.

I had not intended to allude to the vexed 9th clause of the 1876 Charter, but I am here forcibly reminded of an impression that lies deep within my breast that such clause would not have lain so long dormant and unrecognised had the *Veterinary Record* been in existence at that long period of incubation.

I had intended, had time permitted, to shortly review Rabies and Tuberculosis, but I will content myself by saying that the incomplete muzzling order so far as Rabies is concerned, and the option of power to local authorities to seize (or otherwise leave alone) carcases affected with Tuberculosis, has on the face of it an appearance of stampede. The cry of Fire! went forth, and in the rush to execute unfair and piecemeal orders many have been crushed and have fancied themselves injured, certainly not without cause (applause). Quieter and calmer legislation in the shape of all round muzzling and compensation to the butcher in cases of Tuberculosis, where otherwise the flesh would be passed sound, would have acted without creating the ridiculous hubbub, and would have arrested the strong complaints of fancied grievances which have cropped up on all sides and through every possible channel. (Hear hear.) Except on the principle of half a loaf being better than no bread, I fail to see the benefit to be derived from the present muzzling order as carried out.

Life is made up of little worries; and in closing this address I will quote G. R. Sims:—

> "'Gainst minor evils let him pray
> Who Fortune's favour carries;
> For one that big misfortunes slay
> Ten die of little worries."

Mr. GREAVES proposed a hearty vote of thanks to the President for his very able address. If it was only a short one it was certainly a very practical one, and one they were deeply interested in. They were pleased to see him their President, and he trusted that every gentleman would give him their utmost support.

Professor WILLIAMS, in seconding the proposition, said there could be no doubt that the question of Tuberculosis was a very important one. All scientific men agreed that there was a danger in eating tubercular meat—that tubercular meat and milk were dangerous to human life. Probably many children in this country died from consuming milk containing the bacilli of Tuberculosis. They must acknowledge there was danger. It was all very well to say cooking destroyed the vitality of the bacilli, but it was not always that meat was properly cooked. (Hear, hear.) Before vigorous

legislation was resorted to in the matter they must agree as to what Tuberculosis exactly was. He maintained there were three conditions in the cow which were mistaken for Tuberculosis. If Tuberculosis was due to bacilli, they must be able to detect the bacilli by means which they had now in their hands, before they pronounced certain appearances to be true cases of Tuberculosis. He maintained before they could recommend a law to be passed dealing exclusively with such cases they must come to an understanding as to what Tuberculosis was. He felt confident that many animals that were fit for food, though having grapes upon the pleural surface, were condemned by many inspectors without a microscopical examination. They would all remember the Glasgow case, and, drawing conclusions from that case, he believed those who had the management of slaughter-houses—local authorities—should in every town have a board, consisting of two veterinary surgeons and the medical officer of health, in such a town as Leeds, to make a microscopical examination of any questionable carcase before it was condemned. It was the microbe which was dangerous to life, not the growth. If the meat was good and the bacillus absent, it might be reasonably concluded that the carcase was fit for food. The whole profession ought to consider what they ought to denominate Tuberculosis. (Hear, hear.) With regard to the muzzling of dogs' order, he agreed that the partial muzzling would only end in failure. If muzzling was to do away with Rabies, there must be a universal order. (Applause.) If universal muzzling was carried out for six months, Rabies would be exterminated from Great Britain, provided we did not import it from the Continent. He seconded the vote of thanks.

Mr. GEORGE BOWMAN remarked that, owing to certain unpleasantness which had arisen within the last month or six weeks, the Leeds Butchers' Association was getting up a petition to Parliament, urging that Tuberculosis should be included in the provisions of the Contagious Diseases (Animals) Act. Under the existing system a butcher having paid a high price for a beast in the market slaughtered it, and then the carcase might be seized by the authorities, the owner losing the cost of the animal and the value of his trouble and labour. He had been requested by the secretary of the Leeds Butchers' Association to say the Association would be much obliged if the Yorkshire Veterinary Medical Association could assist them in any way in getting Tuberculosis included under the Contagious Diseases Act.

Mr. GREAVES thought the question of Tuberculosis was narrowing to a very fine point. It did not seem such a problem as it was at one time, and there was, he thought, no man more competent to give an opinion than Professor Williams (applause). If there was bacillus, however slight and mild it might be, it condemned the animal as unfit for human food. He was afraid this question of Tuberculosis had done harm to the profession. For some time many of their highest authorities in the profession had been contradicting each other in courts of law on this subject, which had the effect of lowering the profession in the estimation of magistrates and juries, and the public. He hoped the time was not far distant when they would not see the objectionable spectacle of one professional man trying to overthrow the reputation of another.

Mr. G. CARTER said, with regard to the examination of cases of supposed Tuberculosis by the microscope, they might examine many tubercles and find no bacillus there. Therefore in passing a carcase by that means it would previously be necessary to examine every tubercle deposit before they could certify. He believed that the appearances of Lymphadenoma were so different from those of Tuberculosis that there was no danger of mistaking one for the other. He maintained that by the microscopical examination they were not justified in certifying that the carcase was not Tubercle until they

had exmained every growth and every change which had taken place of a tubercular character.

Professor WILLIAMS said there were other means of detecting Tuberculosis. There was cultivation, which in thirty hours would determine the question if the spores of Tuberculosis were there. It was no use Mr. Carter telling them that the mistake of confounding Lymphadenoma with Tuberculosis was not made. It was made every day. The lymphoid growth that might exist might justify a man in saying it looked like a case of Tuberculosis, but an incision into the growth would speedily determine the question. The great distinction between the two was that in the one rapid degeneration and withering took place—in fact, as soon as it was born, whilst in the other there was no tendency to degeneration. Lymphadenoma had a distinct character from Tuberculosis, and when the cases were confounded the microscope and cultivation would soon determine which it was. With regard to who should bear the loss of tubercular carcases, he remarked that in Scotland it had been decided that the auctioneer who sold the animal should be responsible. The question of including Tuberculosis under the Contagious Diseases (Animals) Act was one which he very much doubted would be ever entertained. At the same time he thought they should agitate on the subject.

Mr. TAYLOR thought legislation ought to be brought to bear upon the question of the sale of tuberculous milk. The great difficulty which had always presented itself to him was that of detecting Tuberculosis during life. When it was discovered after death the question was who should suffer the loss—the original seller, the butcher, or the State. It was a hardship for the butcher to suffer, and it would be a hardship also for the farmer, as farming was bad enough now, he was sure they would agree with him. Under these circumstances he could only see that the compensation must come out of the public purse. It was one of those questions of political economy which ought to engage the minds of others than veterinary surgeons. (Hear, hear). With regard to the muzzling of dogs' order, it was on a par with all piecemeal legislation. (Applause.) It was natural that when the edict went forth that certain parts of the country were to be scheduled, that people should cry out, "Why do you make fish of one section of the public and flesh of another?" To get rid of Rabies they ought to muzzle every dog in the United Kingdom and Ireland, and have proper precautions as to the importation of dogs in the way of quarantine. (Hear, hear). He was afraid it would be a very long time before they got their fox-hunting friends to consent to the muzzling of foxhounds, or the foxes those hounds pursued.

Mr. LODGE thought the muzzling, if only partially carried out would be of benefit. He stated that four or five months ago a dog at Dewsbury bit a man, and although the *post-mortem* examination of the animal showed it to be apparently healthy, the man who was bitten died of Hydrophobia.

Mr. TAYLOR did not wish it to be understood that he doubted the efficiency of muzzling. It was its partial adoption he objected to. He thought the question of registration ought to be considered by Mr. Chaplin. He would say nothing about the *post-mortem* appearance of an animal supposed to have died from Rabies, but for his own part he would not certify a dog had died from Rabies except the exudation from the spinal cord was inoculated into other animals and the result ascertained.

Professor WILLIAMS agreed with Mr. Taylor that a certificate should not be given until the inoculation experiment had been performed, to determine whether the case was one of Rabies or not.

Mr. NETTLETON and Mr. CLARKSON having supported the motion, it was heartily adopted.

THE LINCOLNSHIRE EPIDEMIC.

Mr. MASON asked if any gentleman was present who could give them any information with regard to the epidemic among horses in Lincolnshire, about which so much had appeared.

Mr. GREAVES said he had received a communication from the veterinary surgeon who had been in attendance on the horses, and he thought the horses had suffered from the effects of aconite in some form or other. The horses made a peculiar noise in breathing on the slightest exertion, and they would stagger and fall to the ground like "poisoned rats." The lungs were congested, and the trachea and larynx were also congested.

Professor WILLIAMS said from what he had read in the newspapers the symptoms appeared to be similar to those developed among a number of horses in Liverpool. In those cases it was surmised that the animals died from eating a forage called Indian mutter, a peculiar vetch coming from India and Egypt. Many people seemed to consider it an excellent food, but he thought it was the dust in the mutters which caused the death of the animals. He discovered bacilli in the blood just after death. The pathologist of the Great Northern Hospital at Liverpool made a section of the spinal cord of those cases which had lived over the first shock of the disease, and he said the symptoms of roaring were due to some alteration in the cord. He therefore came to the conclusion that the Lincolnshire cases were due to something in the food. They would remember that last year Mr. Philip Deighton brought before them some remarkable cases of deaths in animals which it could only be surmised had resulted from the food they had consumed.

Mr. FLETCHER said he remembered the death of six horses about a year ago where similar symptoms prevailed. The animals began roaring when they were at work; they staggered, and could not walk half a mile. They came to the conclusion that aconite was at the root of the mischief, and the analyst who examined the stomach of one of the horses stated that there were "traces of aconite in the stomach." (Laughter.) He (Mr. Fletcher), upon inquiry, discovered that the horses were attended to by two brothers, whose father was a herbalist. That confirmed him in the opinion that aconite had been used. From what he had since learnt, however, he had come to a different conclusion. The animals had been fed on cheap peas, and probably that had had a good deal to do with their condition.

Mr. MASON remarked that during the last Afghan war he had a number of mules under his care, which gave him considerable trouble. They were sent out to camp, and among the rations were some peas or other class of vetch. After a while the animals suffered from the symptoms described by Professor Williams. On active service, as they would be aware, microscopes were not provided for the use of veterinary surgeons, and he came to the conclusion the animals were suffering from some specific disease. He changed the camping ground, altered the forage, and after a time all the animals became healthy.

Mr. BRIGGS said he saw the cases described by Professor Williams. The lentils came from Egypt. He individually came to the conclusion that it was the oats the animals had eaten which had caused the deaths, and not the lentils.

The discussion then terminated.

SPECIMENS.

Professor Williams exhibited under the microscope specimens of *Anthrax bacillus*, the nature and evils wrought by which he briefly explained.

THE ANNUAL DINNER.

At the annual dinner, which was afterwards held, the President presided, and the vice-chair was filled by the ex-President (Mr. Lodge).

At the conclusion of the repast, which was one of the best and most efficiently served the members of the Society have ever experienced, the toasts of "The Queen" and "Prince and Princess of Wales" were drunk, with musical honours.

The Vice-President, in proposing "The Army, Navy, and Reserve Forces," said it was a happy thing that lately none of our offensive and defensive forces had been required, but he was convinced that whenever the occasion arose they would be found to be in the highest state of efficiency.

Mr. S. LONGHURST, in responding, said there had never been such harmony between the veterinary surgeons and the Department as existed at present.

Mr. PICKERING (Prince of Wales' Yorkshire Hussars) contrasted the position of the army veterinary surgeon of to-day with what prevailed fifty years ago, when any army horse affected had to be attended by a non-commissioned veterinary surgeon. They would, he thought, agree with him that the army veterinary surgeon had used every endeavour to keep up the status of the veterinary profession. He had no doubt that every gentleman present would be prepared to do his duty if the necessity arose for calling upon him.

The PRESIDENT, in submitting the toast of "The Royal College of Veterinary Surgeons," said they had expected to have Professor Axe present, but they had with them several representatives of the College in the persons of Professor Williams, Mr. Greaves, and his brother official (Mr. T. Briggs), who was Vice-President. He wished to refer to the work which was being done by the Royal College, and to ask them to accept the thanks of the profession for the onerous and difficult duties they had performed. They must all be aware what loss of time and expenditure of money the members of the Council were put to, especially the provincial men who attended the meetings in London. A few years ago, before societies such as theirs were born, they had very few provincial representatives. They were mostly London men. But to-day the country men had the say in all matters. They returned the men they wanted if they clung together, and now they were sending three or four times as many provincial men to the Council as they did ten years ago. They had for some time been endeavouring to obtain more lengthy reports of the meetings of the Council, and he was happy to think that they had now achieved what they desired. As he had referred to in his address, it was to the *Veterinary Record* that they were indebted for the more lengthy reports of the proceedings of the Council. They knew now perfectly well what was being done and by whom it was being done. They knew who proposed the reforms for the good of the profession at large, and they knew, when the time came, for whom to record their votes. Referring to the Registration Committee, he said that was a committee which had done very good work indeed, and although it had been said, and at the last meeting Mr. Kidd brought the matter forward with regard to the registration of practitioners—they would have those people wiped off the face of the earth before long. (Hear, hear.) He did not know whether it was worth while going into the question of the Charter, but, according to the solicitor to the College, the Act overrode all new charters; they were bound by the Act. Coming to the 9th clause of the supplementary charter of 1876, he maintained it deprived members of the birthright which the Act conferred upon them. The solicitor said there was no new charter which could overrule the Act, but there was the Act of 1876, which he (Mr. Briggs) maintained did overrule it. At the same time he did not wish to cavil about the matter. They had a body of men in the Council who spent a great deal of time and money forwarding the interests of the profession at large. They occupied a status with the public at large which they had never occupied before, and very great credit was due

for that to the gentlemen who carried out their work in Red Lion Square. (Applause.) In conclusion, he alluded to the improvements carried out at the London offices, owing to the generosity of Mr. Greaves.

The toast was drunk with enthusiasm, and in reply Mr. GREAVES said the duty of the Council was to elect examiners and grant diplomas, but really that was not one-twentieth or one-fiftieth of the work they got through; only the other day he attended a committee meeting, and which occupied three hours, and then there was another committee meeting, and then the quarterly meeting. (Hear, hear.) He was one of the oldest members of the Council, and he had done his best for the members of the profession. (Applause.) The members of the Council were expected to attend five or six times a year, and spend four or five hours there each time. That was the honour of the thing. (Laughter.) With regard to the 9th clause, he said he had been in favour of it. He had seen its working, and he was satisfied that the men who held dual appointments were placed there because they were worthy of it. (Hear, hear.) Their intellectual ability fitted them well for the duty, and he was convinced the profession did not suffer owing to that dual office. With regard to examiners, they endeavoured to appoint men most suitable. men who had large experience and education, men of cultured mind, and who deserved the position. (Applause.) He had been a member of the Council for twenty-five years; he had seen the working of the Council, and had done his best to vote and speak on the right side, and if he had not succeeded in pleasing everybody, he could only say he had endeavoured to do his duty.

Mr. T. BRIGGS, also replying, said last year they had seven meetings of the Council, and when they added to that some fifteen or sixteen other meetings, they would see that being a member of the Council became a somewhat expensive hobby. At the same time he was pleased to do everything he could for the welfare of the profession, and hoped to be able to do so so long as he held the position. It was not for him, a sort of "pitched in" member of the Council, to say much, but he could assure them that though they did not see a tenth part of the work the Council did, they saw something better than they used to see, and they saw it sooner. (Hear, hear.) They might, perhaps, ask "What do the Registration Committee do?" He could assure them that they were working very hard. They had a meeting once a month in London, and had gone into between twenty and thirty cases. In cases where men had been guilty of a misdemeanour, they had struck the names off the list, and they had persuaded by letters some 250 people, who had been calling themselves veterinary surgeons, to take down their signs. They could not publish those cases, as they might be rendered liable to an action at law, and raise the whole subject before the public. They did not want to do that, and they were working quietly but surely, and he could assure them, the Committee was doing all the work that could be done by any Committee. They had had three or four prosecutions, but they had been very careful in the matter. A veterinary surgeon perhaps wrote to the Royal College, sending a bill-head or an advertisement of a man who was using letters behind his name he was not entitled to. Then the secretary wrote back to the veterinary surgeon, and in reply they probably got an answer to the effect that he was not prepared to do anything in the matter as it might injure him. There was the difficulty. The Committee could do nothing unless the country members helped them. As far as the new charter was concerned, he had an open mind. They wanted new charters every few years, but they wanted money to pay for them.

Mr. GEO. CARTER, in proposing "The Examiners," said they owed a very great debt to the Examining Board. They had conducted their duties in the past to the benefit of the profession generally, and with credit to themselves.

No doubt there had been a little grumbling from the neglected students, but that will exist as long as time existed. The method of the election of the examiners was what he would like to touch upon. They would have seen that considerable discussion which had taken place in their periodicals on the question, and also respecting the holding of the position of examiner by gentlemen who had a seat on the Council. He thought it was essentially wrong in principle that their Council should elect from amongst themselves members to hold a remunerative office. In municipal matters, no member of a Town Council could make any business contract with the Council of which he was a member. (Hear, hear.) In Parliament a man could not be appointed a member of the Government for which he received a salary, without appealing to his constituents as to his fitness for the office. No such a state of things prevailed in their Council. They had power to elect from amongst themselves members for the Board of Examiners who received considerable pay, and they (the Council) exercised that power to a very considerable extent. No doubt it would be within their recollection that, at the annual general meeting of the profession, this question was brought up, and a resolution was proposed against the holding of the dual office. Twenty-four votes were registered at that time for affairs to stand as they were at the present time, and twenty-three votes were registered against it. The holding of the dual position was carried by a majority of one, and if they analysed the majority they would find ten of those who voted for it were interested parties.

Mr. T. BRIGGS: You should be correct in what you say.

Mr. CARTER: Twenty-four voted for it and twenty-three voted against, and ten were members of the Council.

Mr. T. BRIGGS: I cannot sit here and hear such remarks.

Mr. CARTER said if Mr. Briggs had taken exception to his remarks, he would find he was correct in the figures he had given. He thought it would have been more becoming to those ten members of the Council if they had abstained from voting. Those were disinterested, no doubt, but they had the power to elect whom they chose. It was wrong in principle. It must be wrong that an officer with an emolument could be called a self-elected one. They had had friction between the examiners and the pupils. The only case he could recall in his experience of the profession—they knew all about it—the men who were the judges were also the judged when the question was brought before the Council. It was the principle of the thing which he revolted against. He thought the profession had shown that it was objectionable to the members of the veterinary profession, and he hoped, and trusted, and believed that the whole profession would speak with no uncertain voice at the coming election in May. (Hear, hear.) Last year the two members returned were examiners and members of the Council, but this year there would be something different. With regard to the duty of examiners in reference to students he had nothing to say except praise. Their duty was to see that a man was fully qualified to practise the art and science of a veterinary surgeon, and if any men had been admitted who were not sufficiently qualified to practise, it was not the fault of the examiners, but of the fact of the time they had to examine their students in. He did not think they had sufficient time to ascertain whether a man was capable of practising his profession. (Applause.) There was no one more quick than the public to find that out. The stigma of it was cast upon the whole profession. They said, "There, this is a case and sample of all the rest." In conclusion, he wished it to be understood that he had not made any statement reflecting upon any particular individual. What he had spoken against was the system of holding dual appointments. He wished the examiners very good health and prosperity, and asked those present to drink the toast with him.

Mr. W. A. TAYLOR, in reply, said he was no longer a member of the Examining Board, but it was no less a pleasure to him to have his name associated with the toast of "The Examiners of the Royal College of Veterinary Surgeons." (Hear.) He admired the proposer of the toast. He had known him for a number of years, and he knew he was a man who did not come to an opinion abruptly or suddenly, or without thought, but when once he arrived at that opinion it would take all Yorkshire and a few tykes living in another land to move him. (Laughter.) Fortunately for them they lived in a time of liberal ideas, and in a time when all men, as long as they did not libel their brethren, had a right to their opinions. He had no doubt that Mr. Carter had a right to his opinion, and he had no doubt he granted that right to his brethren in the profession. They were told that the morality of the principle was everything, but if they had only as food to live upon principles, he thought they would very soon starve. In more things than the appointment of examiners they could not stick hard and fast for principle, and in that particular instance before them they must remember that the Council of the Royal College was not composed of members of Parliament. The representatives who sat at their Council Board were the only representatives of a very small profession—a profession which he might say was only just arriving at maturity—and he said it without fear of contradiction that there were men on the Council Board who were eligible, and whose loss from the Examining Board would be felt very much by the profession generally. (Hear, hear.) In principle he agreed with Mr. Carter (hear, hear), and if he was a member of the Council Board, and his name was proposed for the position of examiner he would retire from the room and decline to take any further steps in the proceedings connected with his own election. (Hear, hear.) He believed that some of the gentlemen who held the dual appointments were beginning to feel their position. He thought it ought to be left to the discretion of those gentlemen and to their good taste as to what was due and right to their professional brethren. (Hear, hear). He believed the examiners endeavoured to pass the men best fitted for the profession. He held it was the duty of examiners not to find out what a student didn't know, but what he did know.

Professor WILLIAMS, on rising to respond to the toast of the "Veterinary Schools," was greeted with the chorus "For he's a jolly good fellow." He said he thanked them for coupling his name with the toast. He had not always been connected with the schools, for he had for many years the honour of filling the office of secretary to the Yorkshire Veterinary Society. He was proud to think that he was spared to be present that evening. Mr. Joseph Carter and himself were now the only founders left. "We were five," as the poet said, but now they were but two, and their recollection of those who had gone before was green in their memories. He alluded in feeling terms to the late Mr. Cuthbert, Mr. Broughton, and Mr. Dray. With regard to what had been said as to the examiners, he remarked that he had no fault to find whatever with the dual appointment. He gave due weight to all the arguments brought up by Mr. Carter, but at the same time he saw no objection to the system whatever. With regard to the ninth clause, he felt it was a cause of friction with the members of the profession, as they were excluded by the clause being members of the Council of the Royal College. He thought when any member entered the profession he was entitled to all the privileges of the profession, and one of those privileges was to represent the profession upon the Council. (Cheers.) Before a man was elected as an examiner it should be proved that he had kept himself abreast of the latest scientific researches of the day. They would be aware that a short time ago certain students evinced great indignation at the conduct of some of the examiners. It was a very sad thing to think of the condition in which

the gentleman who was made the scapegoat of those disgraceful riots was now in. Mr. Robinson, to whom he alluded, had completely broken down, owing to the matter, and he was now an inmate of an asylum and was not expected to live two years. He had completely collapsed before the popular clamour of the students and the conduct of the Council in not re-electing him an examiner. He was a most profound student, a man educated above the great majority of his professional brethren, and a man who loved his profession and studied it assiduously. He would have proved a shining light, but he was lost to them for ever. Some young students seemed to think that the subject of botany should not be included among their studies. He would be sorry to see the day when it was done away with. Perhaps it was not essentially necessary in the profession of medicine, but it was of practical use in the veterinary profession. They had no syllabus, however. It was an immense subject, and he did not believe there was a man living who could pass an examination in every branch. How, he asked, could a young man pass a veterinary examination upon this wide subject unless they had a syllabus? The last addition to the examining board was a most scientific gentleman, and a very nice examiner in every way, but he (Professor Williams) considered he attached far too much importance to botany. It seemed to be the desire of the Council that there should be but one examination of students in one year, but he was of opinion there should be two or three examinations in a year. It was unfair for a man who had passed in most subjects to be put back owing to that cause. (Hear, hear.) The doors of the profession ought to be thrown wide open. At the University if a man passed a subject, he was not asked to go in for it again; but in the veterinary profession they were asked to go through everything again. In conclusion he said he thought the amount of the fees ought to be re-considered.

Mr. FLETCHER gave "The National Veterinary Medical and Mutual Defence Society," expressing the opinion that it had been of great use at different times.

Mr. GREAVES in response appealed to every gentleman present to join the Society, contending that it was their duty to do so. He gave several instances in which the members of the Society had been immensely benefitted by the assistance the Society had afforded. Referring to the dual clause, he said he had watched the election of examiners carefully, and he had never seen a member of the Council vote for himself.

Mr. MASON submitted "The Sister Profession," and said they were getting more and more in touch with the medical profession. He was of opinion that in the future they would see a medical veterinary officer of health, and that he would have in his hands the carrying out of the Cow Sheds and Dairy Act. (Hear, hear.) If they only agitated, he thought in time they would get all they required.

Dr. BRIGGS, in the course of an elaborate and lengthy speech, thanked those present for having drunk the toast. He said medical men and veterinary surgeons had on many occasions had their differences, but he was sure in all those cases the difference of opinion arose from joint ignorance or from mutual misunderstanding. There was no question that the advancement in the knowledge of pathology had required an enormous amount of labour, but especially on the footing they had it to-day.

Mr. W. A. TAYLOR said, as President of the Lancashire Society, he had pleasure in proposing the toast of "The Yorkshire Veterinary Medical Society." He hoped the relations between the two societies might ever be as cordial as they were at present. He trusted the Yorkshire Society might continue to do the same excellent work as they were doing at present, and he was sure in Mr. Briggs they had elected a man as president who would

carefully guard their interests, and use every endeavour to advance their status during the coming twelve months.

The PRESIDENT having briefly returned thanks—

Mr. NETTLETON gave "The other Veterinary Medical Societies." He said the veterinary surgeons north of York had formed the South Durham and North Yorkshire Society, and he was happy to say they had already between twenty and thirty members, including several who were also members of the Yorkshire Association. He was sure the Yorkshire Society would not be jealous of the new one (hear, hear), but would extend to it every assistance in its power. (Applause.) Personally, he must assure the members of the Yorkshire Society, that though he had joined another society, he did not intend to desert the mother society (applause); in fact, he promised to be a better attender in the future than he had been in the past. In thanking the Yorkshire Society for the hospitality they had extended to him as President of the South Durham Society, he assured them that the northern infant would not be behindhand in regard to the hospitality they would show to any of the children of the old Yorkshire mother.

The other toasts were "The Visitors," proposed by Mr. BOWMAN and replied to by Mr. HANSON, and "The Ladies," proposed by Mr. JAMES B. GREENHALGH and replied to by Mr. T. B. EXLEY.

The President, Professor Williams, Mr. Charles Parker, and Mr. E. Hanson contributed greatly to the pleasure of the company by singing or reciting between the speeches.

W. F. GREENHALGH, *Hon. Sec.*

ROYAL SCOTTISH VETERINARY SOCIETY.

A QUARTERLY meeting of this Society was held in the Dick College Buildings, Edinburgh, on February 5th, 1890, Andrew Reid, Esq. (President), in the chair.

The minutes of the previous meeting having been confirmed, the Secretary nominated for election Mr. Manuel, Hawick.

The following gentlemen were then elected members of the Society:—Mr. Young, Haddington; Mr. Pender, Lockerbie; and Mr. Braes, Linlithgow; proposed by the Secretary and seconded by Professor McFadyean.

Mr. MANUEL, Hawick, then read a short paper on

"AN OBSCURE DISEASE IN SHEEP."

It is my intention to place before you to-day some notes on an outbreak of a disease of a peculiar character in a flock of feeding sheep on a farm in the vicinity of Hawick. The outbreak, though not attended with any great fatality, was the cause of considerable loss to the owner, as the sheep were nearly fit for the market at the time of the outbreak.

On January 9th last, I was called to the farm to examine the sheep as to a disease that was spreading very quickly among the flock. On arriving at the farm I found the flock made up of Leicester and Shropshire crosses. They had been bought in the autumn and kept on turnips all winter, and were, at the time I saw them, netted on land from which the turnips had been pulled and stored. The sheep were getting as many cut "swedes" in boxes as they could consume, with oats and hay in the same proportion. The field on which they were penned had a south exposure, but, owing to the continued wet weather and the small bounds to which they were confined, the surface was very muddy. The hedges also being low and open, there was very little shelter, and at the time we were having almost constant rain, accompanied with high winds. The sheep had done very well up till within two or three

days of my seeing them; when the shepherd noticed that one or two of the flock had sores about their noses, and seemed dull. The disease spread rapidly, and at the time I saw them there were over forty affected.

The first symptom noticed was a slight eruption about the nose, followed, in a day or two, by a discharge from the nose of blood and mucus. The discharge being of a sticky character, caused plugging of the nostrils and stertorous breathing, and, where the discharge flowed over, it caused excoriation of the skin. The sheep became very dull, lying with nose poked out and ears lopped, appetite almost *nil*, and when made to move they did so with a slow, unsteady gait.

Treatment.—I at once advised the removal of the whole flock on to old pasture land, well sheltered, and where they would have the advantage of a dry bed; at the same time I had all those showing the slightest symptoms of disease separated and put in a small paddock by themselves, and had them dressed every day, the nostrils being thoroughly cleansed, and then dressed with an astringent lotion. Under this treatment the sheep made a rapid recovery. There was one death, and four were killed, as not being likely to recover without great loss of condition; and among those healthy when moved, there was only one or two slight cases.

Post-mortem Appearances.—There was in every case intense inflammation of the mucous membrane of the nose, with ulceration at its lower part. The lungs were congested in patches, the liver was enlarged, and in two cases had a peculiar nodulated appearance; all the other organs appeared healthy.

A brief discussion took place on the reading of the paper.

Professor WALLEY, who was unable to be present, left a note regarding specimens of the malady forwarded by Mr. Manuel, in the course of which he said he had in these specimens recognised what to him had long been a familiar form of disease in the liver, which, in days gone by, he used to think bore strong resemblance to Lymphadenoma. The coincidental skin lesions about the nostrils, however, led him to think that there was in all probability some casual relationship between the external and the internal manifestations, and that they were both due to the action of some specific agent, such as a micro-parasite. He had succeeded the other day in obtaining the liver of a cow presenting, so far as the nodular formations were concerned, identical conditions with those seen in the livers of the sheep. The result of a microscopical examination by Professor McFadyean had resulted in the verification of their pre-conceived notions as to the nature of the malady.

Professor MCFADYEAN stated that in the liver of the cow mentioned by Professor Walley he had found a number of putty-like tumours, parts of which were infested with micro-parasites in great numbers. Whether, however, these were the cause of disease, or were simply harmless parasites living on the liver-tissue which might have become dead from other causes, he was not prepared to say.

Some other members stated that they had seen the tumours on the livers of cattle, but this was the first time they had seen it on those of sheep.

A paper on

"INFLUENZA IN HORSES,"

prepared by Professor Walley, was then read by Professor McFadyean.

In the few observations I intend to offer for your consideration on the subject of the recent outbreak of Influenza, I shall, as briefly as possible, touch only on the origin of the epizöoty and its nature, its course, and treatment.

The term Influenza is a very convenient and a fairly significant one, not-

withstanding the fact that it does not teach us anything as to the nature of the malady to which it is applied, except, indeed, that the animal creation labours under the baleful effects of some more or less malign influence.

I have frequently expressed the opinion that, were it not for the convenience of the term, it would be far better if pathologists could agree upon some more satisfactory term such as Fever, applying to its different forms a qualifying adjective—*i.e.*, some adjective that would at least give some indication of its character.

For many years I have myself differentiated the various forms of epizoötic Fevers that ordinarily affect the equine species in this country into Catarrhal Fever, Bilious Fever, and Effusive Fever; and while I am quite aware of the fact that this differentiation is only empirical, it is to my mind a very convenient one and srfficiently characteristic.

Many veterinary surgeons there are, I know, who look upon the different types of Influenza as only different phases of one and the same malady, the type in each case being mainly determined by accidental climatic and barometrical influences; but I am, in view of the evidence afforded by careful observation of a large number of outbreaks of so-called Influenza in different parts of the country, unable to subscribe to such a doctrine.

I am inclined to think that the doctrine of similarity in character, as applied to these Fevers, has had its origin in the fact that observers have overlooked the important point, that those influences which favour the development of any particular zymosis are equally favourable to the development of others, and that, consequently, several different epizootic maladies may be brought into active vital energy concurrently. I think it will be conceded that many of the most important individual outbreaks of particular zymotic maladies, both in man and animals, are most usually associated with some other malady of a like character, and that particular zymotic maladies whose influence is exerted usually over a limited area may, owing to some farming atmospherical or telluric influence, contract unwonted energy and break forth in the form of epizootic waves. In this way a zymosis which is ordinarily indigenous in a particular district may periodically extend beyond that district and invade large tracts of country by continuity.

That the different forms of Influenza are due to a specific virus, and that this virus is possessed of great vitality, there can be little doubt. The actual form of the virus is, in my view, only a secondary consideration, but a knowledge of its life-history is of the utmost importance. Unfortunately, we know but little as to the laws which regulate the preservation and reproduction of the great bulk of pathogenic organisms, but we do know that in the case of some of them the power of retaining their vitality under favourable circumstances is, as in the case of the seeds of plants, immeasurable and indefinite.

We know, for instance, that the *Bacillus anthracis* may live and propagate outside the animal body for an indefinite period. We know, too, that the activity of Pleuro-pneumonia lymph can, by a very simple process, be preserved for several years, and we have it as a historical fact that the venom of the snake has been preserved for a very long period (for many years) in a dry state, and has again become active when supplied with a pabulum suitable to its requirements.

In face of these facts is there much difficulty in the way of formulating the proposition, that the virus of Influenza may retain its vitality under suitable conditions for an indefinite period, and that under favourable influences it may develop unwonted activity, and be the means of originating epizootic outbreaks?

In what part of the country the virus of the effusive or catarrhal type may find a permanent home it is impossible to say; but, just as Cattle Plague is

indigenous in the Russian Steppes, and just as Cholera originates in the East, so may such maladies as the one under consideration have, as it were, a permanent habitation in some part or other of our globe.

Of one thing I am quite sure, *i.e.*, that Bilious Fever has a permanent habitation in certain centres in this country, just as its congener in man (yellow fever) has in some of the Southern States of America.

That the various types of Influenza are propagated or rather disseminated both by mediate and direct contagion I am, from various facts which have come under my observation, thoroughly convinced.

In the case of the present epizöoty there is good reason to believe that it was introduced from the West of Scotland. In the case of the last epizöoty I had ample evidence that it was introduced from the North of England, and I know of two instances of its direct transmission by horses from Edinburgh to farm studs at a distance.

There has been one particular feature about the recent outbreak that may be seized upon as a proof in favour either of contagion or non-contagion, and that is, the fact that the heavier classes of horses have been affected in much larger proportion than have the lighter classes (in my experience ten to one); but this, I think, can easily be accounted for by the fact that the heavier and lighter classes are not thrown much together in their daily work. In one or two instances, where animals of the lighter have been stabled with infected animals of the heavier class, they too have become infected; and I noticed some time ago a statement to the effect that in Glasgow a similar state of things had been observed, especially in the case of the tramway horses. Now, I maintain that if the disease, as some contend, were due to atmospheric causes pure and simple, and was neither infectious nor contagious, it would have attacked all classes of horses indiscriminately; and, further, that it would not have confined its ravages so pronouncedly as it has done to horses in particular parts of the town or the city. In my own experience not a single member of certain studs has escaped, while in one or two others the percentage of affected animals has varied from fifty to ten per cent.

With reference to the special character of the recent epizöoty, it has been essentially of the effusive type, though its characteristic lesions have not been nearly so well developed as was the case in previous epizöoties, nor has it in this city been so fatal as it seems to have been in some of the other large horse-centres. I had it as a fact, only on February 1st, that in one single establishment in London 130 horses had fallen victims to the malady; but I have heard of few deaths resulting from it here, and I have had none in my own practice; nor have I as yet had more than one or two cases in which I have had to deal with important sequelæ, and that notwithstanding the fact that relapses have been common, in one instance six horses suffering relapses in the same stable on the same day.

In its course the recent outbreak has presented much the same characters as in previous epizöoties, but in a less marked degree. The well-known pink colour of the conjunctivæ has been less pronounced, and I have only seen one or two instances in which there was conjunctival œdema, and nine in which there was coroneal effusion; and while in the earlier cases swelling of the limbs was a rare phenomenon, it has become in the later cases more pronounced, as has also effusion into the joint capsules, *e.g.* those at the hocks. The tendency to localisation of the lesions in previously damaged structures (such as in a limb that has been subjected to the effects of repeated attacks of weed) has been quite as marked as in previous outbreaks; and while the invasion has in most cases been regular and normal, it has in others been irregular. Thus I have seen instances in which the first indications of the existence of the malady in the system of a particular animal were those of pulmonary congestion, laminal congestion, or colic; and these, too, have in their turn

appeared as important complications. The worst of all the graver cases that I have had to treat was ushered in by a violent attack of pulmonary congestion, which was followed by the development of the characteristic symptoms, and these, again, by laminal congestion, and, as convalescence progressed, by colic and intense jaundice, associated with a markedly intermittent pulse, the latter conditions presaging hepatic and cardiac thrombosis, such as I have occasionally met with in previous outbreaks of the malady; but fortunately the graver symptoms have subsided, and the horse is in a fair way towards recovery.

In reference to the treatment of the malady, I have found that, as a general principle, eliminations, as mild cathartics and diuretics, followed by diffusible stimulants and saline febrifuges with careful nursing, the supply of nutritious matter in an easily assimilable form, such as eggs, milk, and beer when the appetite was in abeyance, and the prompt combating of complications and sequelæ, have been the requisite means to ensure success. In some instances each case has been a study in itself, requiring special modifications in treatment, according to the different phases presented; but I have not found it necessary to have recourse to extraordinary remedies, such as anytipyrin, antifebrin, or quinine; and I may here say that my previous experience of the value of the two first-mentioned agents was not of such a favourable nature as to warrant me in putting much faith in their efficacy.

Combinations of such agents as salicylic acid, opium, and quinine I have not hesitated to administer when circumstances demanded it, and the results of administering such a combination have been satisfactory.

I may conclude by observing that neglect on the part of owners to put their horses off work sufficiently early, with too great a faith in their own veterinary knowledge, are most largely the two factors that tend to the production of grave complications and fatal results in such maladies as the one under consideration.

An interesting discussion followed, Professor Baird, Professor McFadyean, Mr. Manuel, Mr. Reid, and Mr. Combe taking part in it.

An extensive outbreak of Tuberculosis in pigs was then brought before the meeting by the President. W. D. FAIRBAIRN, *Hon. Sec.*

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council Meeting, held on February 5th, Sir John Thorold reported that he had been elected chairman of the Veterinary Committee for the year. A letter had been received from the Central Chamber of Agriculture, stating that the President of the Board of Agriculture had promised to receive a deputation of agricultural associations on Wednesday, the 5th inst., at 4 p.m., for the purpose of urging upon the Government the necessity of early legislation, providing for the compulsory slaughter of animals affected with Pleuro-pneumonia, and for the payment of compensation for slaughter at the cost of the Imperial exchequer; and the committee recommended that the Society be officially represented at this deputation by delegates appointed by the Council.

A letter had been received from the Royal Veterinary College assenting to the conditions of the Society's grant of £500 for the establishment at the College of a Chair of Comparative Pathology and Bacteriology, and stating that in founding this most important chair due care would be taken that the Royal Agricultural Society should be identified with its establishment.

Professor BROWN had presented the following report:—

"*Pleuro-pneumonia.*—During the eight weeks ending January 25th there

were fifty-four fresh outbreaks of this disease reported in Great Britain, viz., thirty-five in England and nineteen in Scotland. The outbreaks in England were in Cumberland, Hants, Kent, Lancaster, London, Middlesex, Norfork, Notts, Surrey, and East Sussex; while those in Scotland occurred in the counties of Aberdeen, Edinburgh, Forfar, Lanark, Perth, and Stirling. It may be observed that the counties of Essex, York (W.R.), and Fife, in which the disease was prevalent throughout the greater part of last year, do not appear in the above list, and have, therefore, been free from the disease for the past two months. In the case of Hants and Notts, counties in which no Pleuro-pneumonia existed in 1889, the disease has recently been introduced. In Hants five outbreaks have been reported since the beginning of the year, all due to a lot of cows sent from the neighbourhood of London and sold at Basingstoke in October last.

"The number of cattle attacked with this disease, or found diseased after slaughter, during the eight weeks, has been 207, while 635 healthy cattle which had been exposed to infection were slaughtered.

"In Ireland twelve fresh outbreaks were reported during the eight weeks ended January 25th, all of them in the Dublin district. Eighteen cattle were attacked, and 131 healthy ones in contact were slaughtered.

"*Anthrax.*—In England twenty-five outbreaks of Anthrax were reported between the end of November, 1889, and January 25th; thirty-four animals were attacked, thirty-two of which died. In Scotland six outbreaks were reported and twelve animals attacked, ten of which died and two recovered. In Ireland four outbreaks were reported; thirteen animals were attacked, all of which died.

"*Swine Fever.*—This disease has been less prevalent during the past two months than it has been for years, only 440 fresh outbreaks being reported, as compared with 719 in the corresponding weeks of 1888 and 1889. The number of swine attacked was 2,633, of which 1,361 were killed, 1,082 diseased pigs died, 299 recovered, while 272 remained alive when the last return was made up. In Ireland thirty outbreaks of Swine Fever were reported, and seventy-five pigs were removed."

Army Veterinary Department.

Gazette, January 31st.

ARTILLERY VOLUNTEER CORPS: 1ST RENFREW AND DUMBARTON.—A. A. Macfarlane, Gent., to be Veterinary Surgeon.

Gazette, February 7th.

HONOURABLE ARTILLERY COMPANY OF LONDON.—H. D. Gibbings, Gent., to be Veterinary Surgeon.

At the Levée held by H.R.H. the Prince of Wales, by command of the Queen, at St. James's Palace, on February 21st, the following officers of the Department were presented by the Principal Veterinary Surgeon to the Army: Inspecting Veterinary Surgeon G. A. Oliphant; Veterinary Surgeons, First-class, E. Ewing, R. Moore, D. Pallin, G. F. Davis, T. A. Killick, J. Mills, F. J. Short; and Veterinary Surgeons A. F. Appleton, J. A. Braddell, F. B. Drage. Dr. Fleming, C.B., attended the levée.

First Class Veterinary Surgeon Durrant has arrived home from India on six months' sick leave.

Veterinary Surgeon T. A. Mitchell, who joined the service in 1883, had been retired in consequence of ill-health, and has since died.

In the Bombay Government Civil Gazette of January 16th, it is announced that Veterinary Surgeon S. M. Smith has been appointed *pro tem.* Lecturer on Veterinary Subjects in the College of Science, Poona.

Veterinary Surgeon Gunn has embarked for service in Madras.

Obituary.

THE death has been reported from New York of A. Lockhart, M.R.C.V.S., who graduated in 1865, and soon after went to that city, where, on the death of his brother, he succeeded to an extensive practice.

The Army Veterinary Department has sustained a regretable loss by the decease of one of its younger officers, Mr. T. A. Mitchell, M.R.C.V.S., who died at his home at Leith, on February 10th, after much protracted suffering, from Tuberculosis. Mr. Mitchell joined the Army in 1883, and after undergoing the usual period of probation at Aldershot, he went on service to Egypt, where, during the Soudan Expedition in 1885 he served at Suakim, and was present at the action of Tofrek. In the Soudan, where he was for about ten months, he had some rough service, and this probably developed the disease to which he succumbed. While at Suakim and suffering from a severe cold (for which he was wearing a mustard plaster on his chest), he accompanied a party of forty men of the 19th Hussars, at the request of the commanding officer, on an expedition to burn one of the enemy's villages. They were cut off by a large force of Soudanese, and had a long gallop for their lives, leaving eight of their number dead on the field. At the surprise and heavy slaughter at McNeill's Zariba, he met with an accident during the stampede amongst the camels, his pony falling upon him, and so disabling him that he could not return to camp for some hours, during which he was reported missing. He was subsequently invalided from Suakim to England, suffering from fever and some chest mischief; but he so far recovered as to return to Egypt. Last year he was again invalided home, this time because of advanced Tuberculosis, which made rapid progress, and though very anxious to return to duty he was permanently invalided on February 5th, and dead on the 10th. He was much esteemed by his brother officers in Egypt, where all his service was passed, for his quiet unobtrusive manner, devotion to his duty, and scrupulous rectitude of character.

The following deaths have been notified:—P. Ellis, M.R.C.V.S., Oxford, who graduated in 1864; and J. C. Thompson, M.R.C.V.S., London, a graduate of 1853.

Notes and News.

A NEW INDEX MEDICUS.—A new medical periodical is announced to appear on April 1st. It will bear the title of *Revue Internationale de Bibliographie Médicale Pharmaceutique et Vétérinaire*, and will be issued under the direction of Dr. Jules Rouvier, Professor of Obstetrics and Gynæcology in the French Faculty of Medicine at Beyrout, in Syria. It will appear every three months, and the object of the editor is to supply a complete index to current medical literature. The annual subscription is 10 francs.

CATTLE DISEASES IN GERMANY.—The Board of Agriculture has recently received from the German Embassy an extract from statistics prepared by the Imperial Sanitary Department respecting the sanitary condition of animals

in the German Empire for the third quarter of 1889, from which it appears that Foot-and-mouth Disease was very widely spread, and attacked a large number of animals in that country during the period mentioned. According to these statistics, outbreaks of Foot-and-mouth Disease were returned in the third quarter of 1889 in the following countries and administrative divisions—viz., Prussia, Bavaria, Saxony, Wurtemburg, Baden, Hesse, Mecklenburg-Schwerin, Saxe-Weimar, Mecklenburg-Strelitz, Oldenburg, Brunswick, Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg Gotha, Anhalt, Schwarzburg-Rudolstadt, Schwarzburg-Sonderhausen, Waldeck, Elder-Reuss, Younger-Reuss, Schaumburg-Lippe, Lippe, Lubeck, Bremen, Hamburg, Alsace-Lorraine. The disease, therefore, appears to have existed in nearly every part of the German Empire, and during the third quarter of 1889 to have attacked the following number of animals:—78,501 cattle, 58,530 sheep, 729 goats, and 15,917 swine.

RABIES IN CHESHIRE.—At Hyde, a large hound, wearing an ordinary strap muzzle, on Tuesday attacked two men and a child, inflicting serious injuries. On the advice of Sir Henry Roscoe, and at the expense of Mr. Thomas Ashton, ex-Sheriff of Lancashire, they left on Wednesday for Paris to undergo M. Pasteur's treatment.

SALT AND BACTERIA.—Some curious investigations have been lately undertaken in order to see if salting meat would destroy bacteria, these having been carried out by Professor J. Forster, of Amsterdam, in conjunction with Herr de Freytag. These gentlemen have found that Cholera bacilli were soon destroyed under the influence of abundance of salt, usually in a few hours; but that Typhoid bacilli, and the bacilli of porcine infectious diseases, frequently retained their vitality for several weeks, or even months, in spite of the presence of abundance of salt. The same was also true of the bacilli of tubercle. In some cases these bacilli were found alive after being two months in pickle, their vitality being proved by their capacity for infecting new cultures. Portions of the viscera of a tuberculous animal, preserved for a considerable time in salt, were found capable of causing Tuberculosis in a healthy animal when introduced into its peritoneal cavity. From these facts it would appear that salting or pickling has but little destructive effect on many of the more common forms of bacilli liable to be found in diseased meat.

A LARGE CYSTIC CALCULUS.—The *Kentucky Live Stock Record* says that Mr. A. Purdy, veterinary surgeon of Shelbyville, Kentucky, on Saturday removed a stone weighing 4½ oz. from the bladder of a bay mare, the property of Mr. John L. Hopkins. Mr. Purdy would like to know if there is a veterinary who ever saw a larger stone taken from the bladder.

AN OLD HORSE.—A letter from Kansas City, U.S.A., says that probably the oldest horse in Maine died lately in Bangor, a mare owned by Mr. J. H. Craig, which dropped down dead in her stall. Had she lived until May she would have been forty-two years old.

A NEW FOOD FOR CATTLE.—It is reported from Christiania, Sweden, that a new food for cattle has been brought into the market there, viz., herring-feeding cake, made from herrings (three parts) and oats (one part). The new cake is said to be cheaper than linseed, and is said to be a first-rate food for milking-cows. The Agricultural Experimental Station in Sweden highly recommends this food for cattle.

RABIES IN AMERICA.—In Atchison, U.S.A., there has been a Hydrophobia scare among the farmers west and south-west of that town. A month ago a

mad dog ran through the neighbourhood and bit a great many other dogs and a number of cattle, among the latter several milch cows. The matter, as there were no immediate results, was soon forgotten. On Friday week interest in it was revived. One of the bitten cows went mad. Jackson, the owner, managed to get his other cows separated from the rabid one, but only after a narrow escape to himself. He ventured in the pasture and the cow took after him, chasing him all over the enclosure, and he finally took refuge in a tree. Here the cow held him a prisoner for several hours, until a neighbour succeeded in throwing a lasso over her horns. This drew her attention to the other man, and Jackson escaped. The rope was then secured to a tree, and thus held a prisoner the cow wore her life out. Jackson's misfortune caused others whose cows were bitten to take alarm, and there is a shortage in the milk supply of the neighbourhood, as people are naturally afraid to drink milk coming from animals that may have the Rabies.

A BLOOD-SUCKING PLANT.—Leroy Dunstan, the well-known naturalist of New Orleans, who has recently returned from Central America, where he had spent nearly two years in the study of the flora and fauna of the country, relates the finding of a singular growth in one of the swamps which surround the great lake of Nicaragua. He was engaged in hunting for botanical and entomological specimens in this swamp, which is known as San Sebastian's, when he heard his dog cry out as if in agony from a distance. Running to the spot from which the animal's cries came, Mr. Dunstan found him enveloped in a perfect network of what seemed to be a fine, rope-like tissue of roots or fibres, the nature of which was unknown to him. The plant or vine seemed composed entirely of bare, interlacing stems, resembling more than anything else the branches of the weeping willow denuded of all foliage, but of a dark, nearly black hue, and covered with a thick, viscid gum that exuded from the pores. Drawing his knife, Mr. Dunstan endeavoured to cut the animal free, but it was only with the greatest difficulty that he succeeded in severing the fleshy, muscular fibre. To his horror and amazement the naturalist then saw that the dog's body was covered with blood, while his hairless skin appeared to have been actually sucked or puckered in spots, and the animal staggered as if from weakness and exhaustion. In cutting the vine the twigs curled like living, sinuous fingers about Mr. Dunstan's hand, and it required no slight force to free the member from its clinging grasp, which left the flesh red and blistered. The gum exuding from the vine was of a grayish dark tinge, remarkably adhesive and of a disagreeable animal odour, very powerful and nauseating to inhale. The native servants who accompanied Mr. Dunstan manifested the greatest horror of the vine, which they call *la sagenas de diable*, the devil's seine, or snare, and were full of stories of its death-dealing powers. One of these stories was of an Englishman residing in Managua, who, while hunting in the swamp a few years before, lay down beneath a tree where a large and powerful specimen of this singular plant was growing, and, inadvertently falling asleep, awoke to find himself enveloped in its web, and in spite of every effort made to extricate him, perished in its deadly embrace. Another story was that of an escaped convict who had hidden in the swamp, and whose bones had been found in the folds of the sagenas only a short time before Mr. Dunstan's visit. These stories, remarkable as they may seem, are firmly believed in by the people, but the only three specimens which Mr. Dunstan was able to find were all small ones, though the meshes of the largest would probably, if extended in a straight line, measure nearly, if not quite, one hundred feet. He was able to discover very little about the nature of the plant, owing to the difficulty of handling it, for its grasp can only be torn away with loss of skin and even loss of flesh, but, as near as Mr. Dunstan could ascertain, its power of suction is contained

in a number of infinitesimal mouths or little suckers, which, ordinarily closed, open for the reception of food. The gum exuded seems to serve the twofold purpose of increasing its tenacity and of overcoming a victim by its sickening odour. The plant is found only in low, wet places, and usually beneath a large tree, and while dormant seems only a network of dry, dead vines, covering the black earth for several feet, but coming into contact with anything will instantly begin to twist and twine upward in a horrible, life-like manner, breaking out with the gum-like substance spoken of before, and enwrap the object with a celerity that is almost incredible. If the substance is animal, the blood is drawn off and the carcase or refuse then dropped. A lump of raw meat being thrown it, in the short space of five minutes the blood will be thoroughly drunk off and the mass thrown aside. Its voracity is almost beyond belief, it devouring at one time over ten pounds of meat, though it may be deprived of all food for weeks without any apparent loss of vitality. Mr. Dunstan attempted to bring away a root of the sagenas, but it died during his return voyage, growing so foul with a strong odour of real animal corruption that he was obliged to get rid of it.

STATE AID TO HORSE BREEDING IN ITALY.—The expense to the Italian Government of the seven centres (*depositi*), and 209 stallion stations for the year 1888—that is, for wages, forage, veterinary attendance, sadlery, harness, shoeing, insurance, and including the £3,875 for race premiums, prizes at exhibitions, and premiums for stallions—was £46,890. Adding the amount spent in purchasing 97 stallions (£18,750), the total sum spent is equal to £65,650. The construction and maintenance of the buildings fall upon the provinces and communes.

THE FRENCH VETERINARY SCHOOLS.—In the French Budget for 1890, we find the following estimates: For the personnel of the veterinary schools 432,800 francs (£17,312); for the material of the schools 565,500 francs (£22,620).

INFLUENZA AMONG HORSES IN PERSIA.—A correspondent of the *British Medical Journal*, writing from Teheran under date of January 13th, comments upon the universality and severity of the Influenza epidemic, and adds: "Influenza has been very general among horses during the last month. In them, I have been assured, the epidemic is of a very severe type, and accompanied with a high death-rate."

A STRANGE RABIES NOTION.—M. Malleville, of Marseilles, states that he has cured a dog of Rabies by extracting its decayed teeth. He believes that dental affection is the real cause of Rabies, and has suggested to M. Pasteur that he should try the following experiments, that is, take a dog and perforate a molar tooth on each side of the jaw, leaving only a very thin layer of tooth substance between the perforation and the nerve of the tooth. According to M. Malleville, the dog will show the first symptoms of Rabies in two or three days. During the second period, when the animal keeps its mouth open, the salivary glands being compressed, will produce abundant saliva, which will be transformed into foam. This matter he regards as the contagious agent of the rabic virus. Every decayed tooth contains several kinds of microbes, which vary with the different stages of the affection.

THE MONTREAL VETERINARY SCHOOL.—We learn that there is to be an alteration in the organization of the McGill University and the Montreal Veterinary College, by which these institutions will become united, so as to combine the resources and advantages of both. The change will result in a course of instruction, under the designation of a "Faculty of Comparative Medicine and of Veterinary Science."

THE WOCHENSCHRIFT FUR THIERHEILKUNDE.—This, the only weekly veterinary journal published on the Continent has passed, this year, into the hand of Dr. Göring of Munich. Commenced by Adams of Augsburg, thirty-three years ago, it has been conducted by that excellent veterinarian in a manner that reflects the greatest credit upon him as a scientist and a gentleman, and is only relinquished by him because of his advanced age and the more urgent demands made upon his physical and mental powers. In its new editor the journal will not, we are satisfied, suffer in repute. It has been a feature in it, as in Continental veterinary journalism, that the welfare of the profession is best ensured by adopting a high scientific and practical standard, and eschewing professional politics and personalities of a degrading nature.

RABIES IN HAMPSHIRE.—A serious outbreak of Rabies has, says the *Field*, of February 15th, occurred among the dogs in the neighbourhood of Bitterne, one of the suburbs of Southampton. It has been distinctly traced to have originated in connection with the Rabies that existed last summer. Two or three of the dogs were at large while suffering from the disease, and it is known that they traversed the greater part of the southern division of the county. Thus it is only reasonable to expect that other dogs have been bitten, and that cases may be reported from other parts. Five dogs have been destroyed, and a *post-mortem* examination of one of the animals revealed the fact that it had a large quantity of hay and straw in its stomach. Prompt action has been taken by the authorities, and the local authority of the Southampton division of the county has ordered the muzzling of all dogs, while the Corporation of Southampton has made a similar order. A general order for muzzling throughout the county, and also in the county borough of Portsmouth, has been issued.

THE EVOLUTION OF THE HORSE.—Professor Flower commenced a course of three lectures at the Royal Institution recently on "The Evolution of the Horse." It is curious that, while the horse and the dog have come to be man's best friends in Europe, the question of how the horse structurally has come to be what it is is taken as one of the tests of the theory of evolution as against the older theory of special creations. Professor Huxley expressed some years ago his belief that, if fossil evidence were forthcoming, we should find the specialised form of the horse allied to other specialised forms that are far from being horses, but which have descended from the same common ancestor. When he said this, the discoveries in America which Professors Marsh and Cope describe were but beginning. They have continued beyond the best hopes, and now, month by month, we hear of confirmatory news. To give a *résumé* of the present state of our knowledge is the object of Professor Flower's lectures. In opening his subject he drew attention to the confused jumble that existed in Cuvier's time, when fossil bones first received the attention of anatomists. We have now, he said, learned to divide all hooled animals into odd-toed and even-toed. There had lately been found in a perfect form the fossil remains of an animal to which the name Phenacodus had been given, which had in a generalised form the bones which we see with special distinctness in the horse, tapir, and rhinoceros, and in the other specialised groups, of which the cow is the most familiar example. The successive steps of descent, with variation, from this old Phenacodus to the horse are to be described in the two following lectures.

THE HISTORY OF INFLUENZA.—The *Novosti*, of St. Petersburg, publishes materials for an investigation of Influenza taken from Italian sources which do not appear to have been much noticed during the present epidemic. According to these, Influenza is such an ancient form of disease, and has occurred so frequently, and been studied so much by doctors and medical authorities, that its recent reappearance ought to have caused no great surprise,

and it ought to have been better understood than it was. The malady appears to have been known for the last 1,400 years. It was first known in Europe in 488, and reappeared in 842, in 929, in 1173, and 1259, without counting the numerous epidemics of later centuries. Since 1580 the Influenza has raged in Italy several times each century. An entire library has been written on the subject by Italian authors during the last 300 years. From 1730 it has been observed that the epidemic always came from Russia. Even the discovery the other day of the supposed bacteria of the disease, made at Vienna by Dr. Jolles, does not appear to be new. All or most of these facts, says the writer of the letter in question, have been forgotten to-day even in Italy.

RABIES IN THE METROPOLIS.—At the meeting of the London County Council on February 18th the Contagious Diseases Committee reported that up to the 31st December last 330 dogs were killed by the Metropolitan Police, of which 123 were found to be rabid; whilst seven deaths occurred in human beings from Hydrophobia.

INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA AT THE CAPE OF GOOD HOPE.—The veterinary surgeons for the inoculation of cattle for "lung-sickness" have been requested to instruct the farmers in the proper method of selecting the virus, and of performing the operation of inoculation, and to render every assistance in carrying it out.

DISHORNING CATTLE.—The question of the dishorning of cattle formed the subject of discussion at a meeting in Perth, on December 27th, of between 500 and 600 farmers and others interested. The various speakers maintained that it was more cruel to cattle to allow them to retain their horns than to perform the operation of dishorning. They condemned the interference of outsiders with farmers in the carrying on of their business, and the remark by one of the speakers that they were determined to resist that interference was loudly applauded. Dishorning, it was maintained, was quite legal, and if it were not so the farmers must unite and get the law changed. After discussion, a resolution was unanimously adopted expressing the opinion of the meeting that young cattle should be horned close to the head, and older cattle not so near the head, but in proportion to their age. A committee was appointed to take what action was deemed necessary in regard to the matter.

GLANDERS IN FRANCE.—A violent outbreak of Glanders has been reported among the horses of the Dragoons quartered at Chartres.

THE PIG A FASTIDIOUS ANIMAL.—We must all make our apologies to the pig, who has been grossly maligned in regard to his food. Instead of being ready to eat anything, he turns out to be the most fastidious of animals. Experiments have been made in France and Sweden, which show this to be the case, and in the latter country the record tells us that out of 575 plants the *goat* eats 449, and refuses 126; the *sheep* out of 528 plants eats 387, and refuses 141; out of 494 plants the *cow* eats 276, and refuses 218; out of 474 plants the *horse* eats 262, and refuses 212; and the *pig* out of 243 plants eats 72, and refuses 171.

SINGULAR DISEASE.—An interesting paper has been read before the Academy of Science, upon the cause of the phosphorescence occasionally exhibited by crustaceans. The author, M. Giard, found an animal of this class on a beach, so brilliantly phosphorescent as to be visible in bright moonlight some yards away. He noticed that the creature was moving slowly along, and not leaping like its companions, and also that it was quite alone among its very numerous congeners in emitting phosphorescence. Surmising that a parasitic source might exist for the luminosity, which would

thus have its origin in disease, he secured the animal and subjected it to a microscopic examination, which resulted in the discovery that the creature's muscles were filled with bacteriæ, which had greatly altered the structure of the muscles, and so occasioned the lameness observed. Seeing that the "phosphorescent malady" was infectious, he inoculated several other specimens belonging to several species, with the result that the disease was communicated and reproduced. He even discovered that the microbes lost none of their power by propagation through several generations. The disease, it was found, took a very regular form. After an interval, varying in length, the entire animal becomes phosphorescent, emitting a white light, and at this stage it exhibits extraordinary activity. Afterwards the light becomes stronger and of a greenish hue, and then the creature loses its activity. This stage lasts some hours, and is followed by a period of immobility, which endures some hours longer, when the animal dies. The body remains phosphorescent for several hours, but its tint is brownish. The whole term, except when the temperature is low, when it lasts longer, is some three or four days. M. Giard has also produced the disease in crabs by aid of the microbes, but promises to communicate the results again.

Correspondence.

ANTHRAX AND COTTON CAKE.

SIR,—In the paper by Mr. Hutton, of Kelso, read at the Scottish Metropolitan Veterinary Medical Society, and appearing in your January's issue, 1890, on the "Use and abuse of cake as a feeding stuff for cattle and sheep," reference was made to Egypt, and blame was thrown on this country for exporting the germs of Anthrax in the cotton seeds, which are eventually made into cake. I would like to ask Mr. Hutton if he would kindly prove beyond a doubt the correctness of this statement, also that "Egypt is the land of Anthrax plagues." This I am inclined to doubt, having held my present appointment under the Egyptian Government for nearly four years, my inspection district being anywhere within the limits of Egypt proper, with ten native veterinary inspectors and one Austrian as subordinates, together with native sanitary officials and native police to give information when any disease exists; also the Domains, Drain, Sanitary, Land Commissions, each having as their principal veterinary surgeon a Frenchman, with a native staff of veterinary surgeons to aid them, we have not yet been able to prove that Anthrax is rampant in Egypt—in fact, hold a contrary view.

If, for instance, Anthrax was extremely common in Egypt, I believe it would not be an easy matter for its germs to be exported with the cotton seeds, as these, with the cotton, are gathered in September and October by the fellaheen, placing them, when plucked from the plants, in their gallabiehs or bags, which, when full, are emptied into sacks to be carried by camels or donkeys to the mills. There the seed is separated from the cotton, which is then pressed into bales, the seeds being put into sacks. Therefore, I imagine that indeed a very small percentage comes in contact with the land, and if even it did the cotton would be the best harbour for the germs, the seeds taking a very much smaller percentage—so small, that it would minimise the danger beyond recognition. The mere fact that Anthrax has occurred in Mr. Hutton's practice, amongst a flock of sheep eating crushed cotton seeds from Egypt, would not, to my mind, prove that the cotton cake caused it; other causes probably overlooked by Mr. Hutton were

at work. Apparently, from the facts given by Mr. Hutton, the sheep died from eating quantities of mouldy cake, causing acute bowel affections, symptoms of which were mistaken for Anthrax.

W. LITTLEWOOD,
Chief Veterinary Inspector, Sanitary Administration, Egypt.

Cairo, *Jan. 17th.*

PLEURO-PNEUMONIA—THE WHOLESALE SLAUGHTER ORDER, 1888.

SIR,—The great interest which the public have taken in the above-named subject, is shown in the announcement appearing in the public press, that another influential deputation—consisting of delegates from the Agricultural Societies throughout England, Ireland, and Scotland, and the members of their respective associations—considered it necessary to submit to Mr. Chaplin (President of the Board of Agriculture) their views relative to the adoption of more stringent measures in connection with the wholesale slaughter order, which, up to the present, has been a failure. This is a substantial proof that the Veterinary Department of the Privy Council is universally condemned as not being competent in their special calling; and it is a significant fact that veterinary surgeons were absent in the roll of members of this deputation.*

At various periods, similar deputations and committees of inquiry were deemed imperative to investigate the cause for the deplorable shortcomings of the Veterinary Department. Under these circumstances, it is evident that there is something radically wrong in the constitution of the Veterinary Department.

The Department should be in a position to authoritatively satisfy the public that it is capable of dealing with the prevention of contagious diseases of animals, instead of being brought to the pitiable condition of meekly receiving information on the subject from those who have not specially investigated the matter. The governors thereby submit to be governed by those who should look to them for direction, thus stultifying themselves by submitting to be instructed by unqualified haphazard guidance; and this state of things must continue until the Department is properly constituted.

No doubt the Department has committed a series of blunders resulting in failures and injustices, placing them in such a dilemma as to make them subservient to the dictates of illogical deductions on non-scientific and impracticable suggestions—based on fads and fallacies, ignoring the practical and scientific knowledge of facts.

I have frequently, through the medium of the press, drawn attention to the apparent cause for the foregoing lamentable mal-administration of the Contagious Diseases (Animals) Acts, and the unjust stigma which it reflected on the veterinary profession; and have also stated facts proving that the Veterinary Department is so constituted that the combined knowledge of the veterinary staff is not sought for, but, on the contrary, their abilities are suppressed, and they merely carry out the behests of individuals who have proved themselves incapable to direct them in the matter.

It is, therefore, self-evident that the Department requires reorganisation; and its action demonstrates that it is not in a position to either definitely establish or refute, by statements of facts, the advisability of adopting remedial measures when recommended by a large number of interested persons. This particular instance may be explained by the fact that the wholesale slaughter order of March, 1888, was adopted, notwithstanding that the weight of evidence given before the Departmental Committee, held

* This is an error.—ED. *V. J.*

in the following month, was opposed to it (as clearly shown by the analysis of the evidence which I have published); and now that it has proved a failure, the heads of the Department remain silent.

The pithy remarks of Professor Williams on the subject are worth quoting, viz.: "If the disease could be attacked at the fountain-head, the best way to get rid of it might be to stamp it out by means of slaughter; but this could not be done. They did not know where it was, or from whence it came. Under the circumstances, the system of indiscriminate slaughter had proved a failure, and would continue to do so. He had long advocated that they should have a combination of slaughter and inoculation in dealing with the malady, and he still adhered to that opinion. The combination had proved effectual in Holland in ridding the country of the disease." I may add that the owners of cattle co-operated with the authorities, and until the authorities in these countries act in such a manner as to make it the interest of cattle owners to co-operate, it cannot be expected that they will do so.

My pamphlet on the laws pertaining to the Contagious Diseases of Animals Acts explains my views on the subject.

116, Stephen's Green, Dublin, JAS. MCKENNY, M.R.C.V.S.
10*th February*, 1890.

CASTRATION IN HORSES.

SIR,—Much has been written from time to time in the pages of your journal on the different modes of castration. I have tried the cautery, also the clam, what is known as the "covered operation," also torsion. I have likewise tried the application of olive and carbolic oil to the newly seared and twisted cord before finally quitting it. Still, some six weeks after the operation a case now and again happens in which an abscess forms in the groin. These abscesses cause a considerable amount of pain and loss of condition. I shall be very pleased to hear from more experienced practitioners how to avoid this troublesome sequel. "V. S."

THE VETERINARY PROFESSION.

DEAR SIR,—I have read Mr. Hunting's editorial in the *Veterinary Record* of the 1st inst., with feelings of shame and disgust. What does Mr. Hunting mean? Has he undertaken to bring out a *journal* for the benefit of the profession, or is it to be a pamphlet issued with the particular object of attacking Dr. Fleming? I think his behaviour is altogether unprofessional and unworthy of any member, to thus devote himself to a shameless course of attacks against another member, and the *best* one of the veterinary profession that England has yet known, upon such a matter as that of an operation *he was the first to introduce into this country*. Can anybody deny this? I defy him. The success of the operation, which Dr. Fleming will show whether it is small or great, so far noted is quite enough to attract our attention, and compel us to acknowledge to Dr. Fleming our deep indebtedness.

Is then Mr. Hunting and a few of his supporters, who do not understand professional etiquette, or entertain regard of any kind for a colleague, to continue his course of action unchallenged by the profession of which Dr. Fleming is its most worthy member? Has the profession thus easily forgotten itself as to permit this? I think not. In no other country in the world would the veterinary profession permit such action as that of England has done in the present case up to date. There is no other body of men more united and more ready to congratulate a professional brother than veterinarians throughout Europe, except that part of it called Great Britain.

Let our deeds, then, be worthy of our name. Let us further take an example from those in still nearer parts than the Continent, the members of the sister profession in our own country, and let us uphold each other. Let us not become enemies of those who are trying to do good for our profession, and are offering the use of their energies and ability priceless before us. But let us rather take advantage of the opportunities given, and seize hold of that which is good, encouraging one another in everything which has for its object the attainment of good. R. W. BURKE, F.R.C.V.S.

Feb. 1st, 1890.

"LACK OF CONTRIBUTIONS," OR A SECRET OF MENTAL LASSITUDE IN A PARTICULAR PHASE.

SIR,—I notice that a general regret has been expressed in nearly all the journals, and rightly, I believe, upon the subject of the lack of contributions from members of our profession, and to which various solutions have been suggested, but the main one of these is believed to be "pressure of daily work." Yet this can hardly be, as the same pressure of business might be said to apply in the case of medical practitioners, and yet they always contribute their share, and liberally too. What, then, can be the cause, and how are we to endeavour to explain it? Is it Anæmia of the cerebrum? I think not. For the cerebrum of mammon, in health, is ever operative. What is the only solution, then, that lies within the man which he fears to disclose? It is a secret—that of dread lest his head should at any time be bruised against a stone, which makes so many "weaker members," and some stronger ones also, shrink from the pleasing task of writing for our journals. I have repeatedly shirked the duty myself, knowing what are its numerous consequences, the enemies I would create, and how I have sometimes trembled as each new volunteer has joined its already too forcible ranks. It seems like a game at whist, where one can read each other's hand. The contributors are few, and those who criticise are so numerous! This is not the case with the medical profession, who have always more than four to play the game, and in which freedom rules an interchange of thought between its members.

"*Vis Unita Fortior.*" How often we read it on the face of our journals every month, and how seldom we pause to think upon the weight of those words! To contribute to our journals "liberally," we must be prepared to receive knocks, and some severe ones too; but my experience would lead me to say that the writer will soon grow callous, in obedience to a natural law everywhere exemplified, so that he cannot feel them. His nerves will no longer respond, except to *sympathy*, the chief among counter-irritants that will remove even calcification from its depths and transform it into free, motile tissue.

Then there are some who do not *read* a journal! This is due to freedom of thought in another direction. "These things I read when I was a student."—*Vérité!* No one is a professional man unless he is always a *student.* "VIS UNITA FORTIOR."

SELF-ABUSE IN HORSES.

DEAR SIR,—Amongst the numerous advertisements of *The Horseman*, issued at New York, U.S.A., December 26th, 1889, I notice "'The Springsteen Stallion Shield,' the only sure preventive from self-abuse, price six dollars. Over five thousand in use."

Surely self-abuse does not exist to such an extent among horses! Want of exercise, over-feeding, and other causes may produce an irritable condition of the generative system; but to such an extent?

Here would be an opportunity for discovering whether horses are liable to involuntary seminal discharges! PANAMA CANAL.

THE *VETERINARY RECORD* STILL IN THE CLOUDS.

SIR,—The *Veterinary Record* of February 8th, while trying to differentiate the title of "farrier" from veterinary surgeon, in another page speaks of one "vet." when giving its strictures upon the "Veterinary Science still in the Clouds," a yet more objectionable term to be used for the title of veterinary surgeon.

A VETERINARY SURGEON.

[The term "vet.," as applied to a member of the veterinary profession, savours strongly of stable or pot-house slang, and no veterinary surgeon who has any respect for himself or his calling should countenance its employment, much less employ it.—ED. *V. J.*]

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE next meeting of the above Association will be held at the Blackfriars Hotel, Manchester, on Wednesday, March 12th, 1890, when Professor Pritchard will introduce for discussion the subject of "Fistula." Tea at 5 p.m. Business at 6 p.m.

PETER PIKE, *Hon. Sec.*

AN APPEAL.

WE are requested to inform the benevolent in the profession that the widow and family of the late Mr. Hall, M.R.C.V.S., Newcastle-on-Tyne, are in a destitute condition, and that contributions to relieve their necessities will be most gratefully received. Mrs. Hall's address is: 14, Palatinate, New Kent Road, London, S.E.

CORRECTIONS.

IN the Journal for last month, page 78, for "Schiudelka" read "Schindelka," and for "Aurens" read "Aureus."

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. W. Burke, A.V.D., Athlone; C. B. Jones, Toronto, Ontario; F. W. Anderton, Halifax; L. Savournin, London; Professor Smith, Ontario; "Panama Canal"; W. Littlewood, Cairo; J. McKenny, Dublin; W. H. Hoskins, Philadelphia; J. Mills, A.V.D., Chatham; "V.S."; P. Beattie, Turriff; "A Veterinary Surgeon"; "Vis Unita Fortior"; Messrs. Arnold and Sons, London; T. D. Broad, Bath; F. C. Mahon, South Repps; C. A. G. Mitchell, M.D., Leith; F. Raymond, A.V.D., Woolwich; W. F. Greenhalgh, Leeds.

BOOKS AND PAMPHLETS: *Dr. T. Graham Balfour*, Opening Address at the Royal Statistical Society; *M.E. Decroix*, Projet d'une Langue Hippique Universelle; *Sir H. E. Roscoe*, The Life Work of a Chemist; *Dr. W. R. Smith*, Relation of Micro-organisms to Diseases in Man; Proceedings of the United States Veterinary Medical Association; *Drs. Boschetti et Bassi*, Fleming's Trattato di Ostetrica Veterinaria; *Dr. Boschetti*, Sulle Principali Cause di Diffusione della Tuberculosi; Johns-Hopkins Hospital Reports; *G. Lehndorf*, Handbuch für Pferdezuchter; Johns-Hopkins Hospital Bulletin; *Messrs. J. B., A., and G. Gresswell*, A Manual of the Theory and Practice of Equine Medicine.

JOURNALS, ETC.: *Clinica Veterinaria; Journal of Agricultural Society of Victoria; Annales de Méd. Vétérinaire; Thierarzt; Revue Vétérinaire; Hufschmied; Echo Vétérinaire; Sanitary Record; American Veterinary Review; Wochenschrift fur Thierheilkunde und Viehzucht; Lancet; British Medical Journal; Recueil de Méd. Vetérinaire; American Veterinary Review; Live Stock Journal; Journal de Médecine et Zootechnie Veterinaire; Edinburgh Medical and Surgical Journal; Giornale di Veterinaria Militare; Mark Lane Express; American Live Stock Journal.*

NEWSPAPERS: *New York Star; Glasgow Herald; Baltimore American; Eastern Counties Gazette.*